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AFTER VACATION.

WHO can tell how much of gain
In strength of muscle, nerve, or brain,
Vacation brought us from the sea?
And more than that; I'm sure the might
Of all that glory passing bright
Of sky and sea, of day and night,
Must bring to us a larger life,
A braver outlook for the strife,
A stronger faith, a deeper love,
A surer hold on things above,
Until again to you and me
Vacation brings the restful sea.

—G. M. HOWARD.

THE LATEST ATTACK.

A RECENT magazine editorial asserts that "The indorsed text books in physiology, which have been put into our public schools, owing to the zeal of the few and the carelessness of the many, should be taken out again," because they are "inaccurate, unsound and dangerous."

This is a grave and wholesale charge against a large class of school literature, but it has been made and triumphantly refuted too many times in the past to alarm the friends of scientific temperance, or cause them to swerve one iota from their determination to secure right teaching in this vital subject to every child in the land.

The real issue is not the value of these particular books—some of which bear well-known names, and all of which have been declared by competent authorities to be in harmony with the findings of modern science—but whether truth points to total abstinence for the individual, or to the three glasses of whiskey per day advocated by Professor Atwater. What is the truth here involved? The question is freighted with individual and national destiny, and no hasty conclusions can be allowed to decide. If the charge of inaccuracy of the text books can be sustained, no one will be more eager than the friends of temperance education to have the inaccuracies corrected, for truth and truth only is what we desire taught. It is an unwarranted assumption to charge that temperance people want untruths taught for the sake of effect. They are not so demented as to fail to realize that untruth or distortion of truth but reacts upon the cause or individual that resorts to it.

Professor Atwater's report and the editorial referred to above claim that it is an error to teach, as do the text books in question, that alcohol is a poison and not a food. In the interest of clearness let us first inquire what is meant by the term "poison" as used in these books. Does it mean what our critics assume when they use it?

The following parallel columns show that there is in these text books no juggling with definitions to make a point. Instead, the definitions of poison which they give, and all statements concerning the poisonous character of alcohol, are free from bias or distortion, and are sustained by the most eminent medical authorities:

TEACHINGS OF THE INDORSED SCHOOL PHYSIOLOGIES AS TO THE DEFINITION OF A POISON, AND ALCOHOL AS A POISON.

From a high school text book:

Among the many fermentations there is one that demands special attention on account of its consequences to mankind; one of its products is the liquid known as alcohol—a poison which is the main constituent of all commonly used intoxicating drinks. A poison is any substance which tends, when taken into the body, to injure or kill it.—"Human Body and the Effects of Narcotics," p. 26, by H. Newell Martin, M.D., late Professor of Biology in Johns Hopkins University.

From a high school text book:

It (alcohol) is a poison and imparts its poisonous quality to any liquid containing it. It primarily affects the brain and is therefore classed as a cerebral or narcotic poison.

Any substance, whose nature it is when absorbed into the blood to injure health or destroy life, is called a poison.—Tracy's "Outlines of Anatomy, Physiology and Hygiene, pp. 2 and 56.

From an advanced grammar grade text book:

Any substance capable, when absorbed into the blood, of injuring health or destroying life is a poison. Alcohol is capable of destroying life when in sufficient quantities, as has been proved by numerous instances of death follow-

TEACHINGS OF STANDARD AUTHORITIES AS TO THE DEFINITION OF A POISON, AND ALCOHOL AS A POISON.

A poison is a substance which, when absorbed into the blood, is capable of seriously affecting health or of destroying life. — Treatise on Poisons, p. 18. By Alfred Swain Taylor, M. D., F.R.S., Lecturer on Medical Jurisprudence in Guy's Hospital, London.

Generally, a poison may be defined as a substance having an inherent deleterious property which renders it capable of destroying life by whatever avenue it is taken into the system. Substances which act only mechanically, such as powdered glass, are not poisonous. A poison then, may be defined as any substance which when introduced into the system, or applied externally, injures health or destroys life, irrespective of mechanical means or direct thermal changes.—Quain's Dictionary of Medicine.

From an exhaustive definition we shall have to class every substance as a poison which, on becoming mixed with the blood, causes a disturbance in the function of any organ. That alcohol is such a substance, can not be doubted. . . . Very appropriately has the English language named this disturbance caused by alcoholic beverages intoxication, which by derivation means poisoning. — Adolf Fick, Professor of Physiology, Würzburg.

They (workmen, women and children) absorb under all its forms a poison that filters

ing the drinking of spirits on a wager, or a draught of brandy or gin taken in ignorance by a child.

Alcohol is also capable of injuring health, as is proved over and over again every day. Few people have not known of one or more cases of loss of health from this cause, while physicians are meeting them constantly. Remember this: Alcohol is a poison. It is classed as such in standard treatises on poisons, in medical dispensatories, and by eminent medical writers too numerous to mention.—Albert F. Blaisdell, M.D., in "Our Bodies and How We Live."

through all their bodies, which, under the action even of small doses, daily repeated, breaks the strength, paralyzes the nervous system, annihilates little by little the intelligence, strikes the drinker with precocious senility, and makes in a few years, sometimes even in a few months, of an individual once robust, active, and a valuable member of society, a being abject, degraded, infirm. This poison is alcohol.—A. Motet, M. D., Paris, Member of the French Academy of Medicine, in an address before the VI. International Congress against the Abuse of Alcoholic Liquors.

the eminent chemist and physician, Sir Benjamin Ward Richardson, M.D., LL.D., F.R.S., who asserted that "The character of a substance does not depend upon its quantity but its quality." If the school physiologies in question were to be revised to meet the views of Professor Atwater on this point they would justly call forth the rapier thrusts of keener critics.

To read into the terms employed in any text book a meaning utterly at variance with standard definitions, and on this basis to claim that the teachings of such a book are inaccurate is a charge so unjust and absurd as to have no influence whatever over the intelligence of this age.

ANOTHER FALLACIOUS CHARGE.

THE opponents of temperance instruction in our public schools charge and return to the charge that the text books are inaccurate.

"The cool fresh air whence health and vigor spring
And promise of exceeding joy hereafter."

We maintain that the foregoing paragraphs show that in the text books the nature of a poison is clearly described and accurately defined, that alcohol is shown to answer to that description and definition, and that the teachings on these points in the text books is identical with that of acknowledged authorities. Where then lies the error?

Professer Atwater says that "Alcohol used in quantities and ways which cause no injurious effects can not properly be called a poison." Morphia, chloral hydrate, digitalis, strychnia are classed by the foregoing authorities as poisons as well as alcohol, but these substances, although often prescribed in quantities and ways which cause no injurious effects, have not been classified as "sometimes poisons." It would seem therefore, that Professor Atwater's definition of a poison is shaped only to fit the case of alcohol, and with reference to quantity rather than quality." In this he differs radically from

To support this assertion one critic quotes from a paper by Prof. Hodge statements from the school text books that alcohol is not a food, opposite statements from Fothergill's "Practitioners' Handbook" saying that alcohol is a food. On which side lies the error?

Professor Fothergill gives his reason for calling alcohol a food. He says, "If alcohol is oxidised in the body then it is a true food or furnisher of force." This is the reason given by others who make the same claim, Prof. Atwater among the number. His much heralded experiments have verified the work of previous investigators who have showed that alcohol is oxidised in the body. But is it therefore a food? Reduced to a syllogism, the reasoning of those who claim that it is would be:

Anything that is oxidised in the body is food.
Alcohol is oxidised in the body.
Therefore alcohol is food.

The error lies in the major premise, viz., anything that is oxidised in the body is food. This error has been set forth by physiological chemists and was clearly pointed out in an address before the International Medical Congress in Moscow in 1897, by Robert Koppe, M.D., who said :

"The opinion that ethyl-alcohol is a useful source of energy in the human organism (and therefore a food) in consequence of its combustibility is not scientifically justified.

The consideration alone that a substance is oxidised in the body in no wise justifies its use as an energy-furnishing food. Morphine as is well known burns in our bodies into oxide of morphine. Happily, however, it has not occurred to anyone to proclaim morphine for this reason a proper source of energy (a food) for the human organism, as is unfortunately done in the case of ethyl-alcohol."

Among other poisons which are oxidised in the body may be mentioned phenol (carbolic acid), and muscarine, the poisonous principle of toad stools. If alcohol is a food because it is oxidised in the body then these noxious substances must be food also. The suggestion is absurd if Prof. Fothergill and the critics mean the same thing by a food that is commonly understood, i.e., a substance that nourishes the body without injuring it. Evidently they do not, and here is another case of using a word in a different sense from its commonly accepted meaning, the sense in which it is used in the indorsed text books.

What authority have these text books for not saying, as the critics aver they should, that "Alcohol is sometimes a food."

Dr. August Forel, Prof. of Psychiatry of the University of Zurich, in a Thesis on the Alcohol Question, says :

"Alcohol, or ethyl-alcohol, is a poisonous matter, both for the human and animal organism. Its venomousness increases with the amount and frequency of the doses. But even when partaken of in the most temperate way it plainly interferes with the functions of the various organs, it can not be regarded as being either nourishing or strengthening, and therefore it is of no use whatever in a normal diet, and can not be counted as a factor of the same."

Prof. Atwater's experiments do not overthrow this testimony of analogy and of one of the greatest specialists on alcohol. Before deciding that alcohol is a food we must know that the three glasses of whisky given Prof. Atwater's man shut up in the air-tight glass box, besides being oxidised in the system, liberating heat and energy and preventing waste, did no harm to any function or organ of the body. He has not told us what the effects of these potations were upon the brain and nerves, the circulation and digestion of his subject, nor whether he can prove that the alcohol which the subject took will not tend to create an uncontrollable and destructive appetite for more. All this Prof. Atwater must demonstrate before he has proved that alcohol is a food according to accepted definitions.

One critic questions whether anything on the subject should be taught the children in our public schools. He differs from the American people. They have decided almost unanimously that their children shall be taught as a part of the laws of health the dangerous and evil character and effects of alcohol as a beverage, as well as of other narcotics. Other nations throughout the civilized world are moving forward to follow our example in this respect. In Germany a petition signed by a large number of eminent physicians was recently presented for a law requiring this study which should specify "total abstinence as a duty."

If anything is to be taught, our critics evidently would have us teach :

First, that alcohol is sometimes a poison. But neither they nor anyone else can tell how much would be a poison for every individual drinker or how little would not be, nor how soon a dose at first non-poisonous may become poisonous ; nor can it prove that small non-poisonous quantities are not cumulative in their effects, leading to final catastrophe. It is therefore evident that truth would suffer from any such modification of the statement that alcohol is a poison.

Second, that alcohol is sometimes a food. But these critics can not foretell when in any case it would cease to be a food and become a poison. The only reason given for claiming a food value for it ever, is that a certain amount of it is oxidised in the body. Competent authorities say this does not prove it. Therefore truth would again be sacrificed.

Our critics object to total abstinence being taught. Not until they can get repealed the law, as fixed as the law of gravitation, whereby a narcotic like alcohol has the power to create an uncontrollable appetite for more, will truth support any other teaching than that of total abstinence, as great Nature's law that will safely apply to all. No total abstainer ever became a drunkard ; drunkenness is the result of moderate drinking.

Our critics would have us teach that temperance is self-control, but of what use is it to teach self-control in the use of a substance like alcohol which has the power to destroy self-control and to make it impossible?

If the text books should be revised to teach what these critics wish, they would be most "inaccurate, unsound and dangerous" and would deserve the anathemas of the coming generation who would be misled by them.

Primary Lesson.

FIRST YEAR.

CLEANLINESS.

"THERE is no blessing like the education which we can use, but the education which we can not use is a curse:" says Rebecca Harding Davis. This sentiment is echoed by every business man as he surveys the vast field of incompetents who have absorbed a certain amount of knowledge, but through lack of training have not the ability to put it to practical use.

Many people fail to realize the advantage of scrupulous neatness in dress and person, because this phase of their education has been neglected at home and in the school-room. The child must be trained into early habits of cleanliness and thoughtful attention to the details of his toilette or the man will be a sloven.

Keep this in mind as the little ones come together for their introduction into school life. One of their first lessons in hygiene should be in neatness and cleanliness, and they should be required to put it into practice every day in the year. This does not mean that the child is not to play in the dirt or enjoy his recesses with the utmost abandon; but when playtime is over clean hands and faces are resolutely to be insisted upon. Do not expect this result to be achieved in a day, or even a week. It will require firmness and tact and an infinite amount of patience on the teacher's part, but once attained it is a habit which will go with its fortunate possessor through life, opening many a difficult portal to success.

THE COVERING OF THE BODY.

Before children can express their thoughts freely and naturally they must first have forgotten themselves and become absorbed in the subject in hand. With little folks this result can always be brought about by a well chosen story. We suggest beginning the present lesson by the story of

EDMUND AND HIS FATHER.

Edmund was a little boy who lived in the country. One day when it was storming so hard he couldn't play outside, the rain began to come down on the inside too, and made a wet place on the plaster and the floor below.

"The roof leaks," said Edmund's father. "I must put some new shingles on it to-morrow."

The next morning was bright and sunny, and Mr. Clapp was early at work. He tore off the old shingles and put fresh ones in their places until the whole roof was as good as new.

The next time it rained no water could get into the house.

"How do shingles keep out the rain?" asked Edmund. His father took some of the boy's blocks and showed him how the roof of a house is built, then how the shingles are laid, overlapping one another and so close together that no water can get between them.

"Do you know why water doesn't soak into our bodies when we have been out in the rain?" asked Mr. Clapp. "You know it wets only the outside and runs off quickly."

"I don't know," said Edmund. "Why doesn't it? We aren't shingled the way houses are."

"Our bodies are covered with something better," his father explained. "Sit down here while I tell you about it."

Mr. Clapp took a microscope out of his pocket and told Edmund to look at the back of his hand through it. Edmund thought this was wonderful. He saw that the outside of his skin was made up of many tiny scales placed one on top of another so that nothing could hurt the body underneath. He saw also tiny hairs all over the surface, and many little holes which he did not know the use of.

His father told him that perspiration comes out of these little holes and that in this way the body gets rid of some of its waste matter. They help too, to make the body cool. "They are something like little ventilators," said Mr. Clapp. "You see how much more carefully we are made than even the best houses, for our skin grows of itself as fast as it wears out, and keeps our bodies as good as new."

THE NEED OF CLEANLINESS.

One day Mr. Clapp came home with something queer in his hand.

"It looks like a snake," said Edmund, "but it hasn't any insides."

His father told him that it was a snake's skin, and that when one of these creatures gets too big for his clothes or needs a new suit, he wriggles and twists until the old skin splits and falls off and he can crawl away with a soft new skin, which has been growing underneath.

"Our skin is all the time wearing out too, but we get rid of it a little at a time and not all at once as a snake does. When you take off your clothes to-night turn them inside out and shake them, then tell me in the morning what you saw."

"My clothes were all full of dust," said Edmund the next day. His father told him that much of this dust was really tiny pieces of dead skin which people need to get rid of, just as the snake needs to lose his old worn out covering.

Ask the children in your class to do the same thing with their clothing and tell you what they notice. Why do we need at night to air the clothes we have worn all day?

Sometimes there is something on our faces and hands and other parts of our bodies which doesn't belong there. Where does this dirt come from? Should we always stay indoors and never romp and play or work for fear of soiling our hands or clothes?

If we tried that plan we should grow up thin and pale. We need to play on the ground while we are children, but when we are through our play and ready for something else, we should wash our faces and hands and make ourselves fit to be seen.

How do animals keep themselves clean? What animals have you seen taking a bath?

Encourage every child in the class to think of some illustration, and give it in his own words. Ask the children to find all they can about the habits of different animals in this particular. Which animals are neatest in their ways? Which do we like best to have about us?

How do the pretty flowers and the plants in our gardens keep so fresh and bright? How do they look when it has been dry and dusty for a long time? What do the crops in the fields and the grass on our lawns need to keep them fresh and green and growing? How do we keep our streets and houses clean? How do we clean our soiled clothing? The dishes from which we eat our food?

Get from the children as many reasons as you can why cleanliness is both desirable and necessary; then by various devices show how it may be secured.

A large china doll can be used as an object lesson in washing every part of the face, neck and hands; in showing how to clean the ears, and how to care for the nails, keeping them neat and of the proper length. Give only a few of these facts at a time, but emphasize by repeated drills until each child knows just how to keep his own hands and face clean.

"Edmund thought this was wonderful."

Care of the Hair.

Girls in this grade are seldom able to comb their own hair if it is long or heavy, but a little talk about this phase of personal neatness will make them more patient and willing to have it dressed by others. It is most desirable that both boys and girls, at least in the primary grades of the public schools, should wear their hair short, and in many cases the teachers can effect this change by talking with the parents. The children can then help in making this part of their toilette. Show just how it should be done by means of a doll with hair coarse enough to be combed and brushed, or different boys and girls in the class may be used as object lessons.

Care of the Teeth.

Special pains should be taken in all primary grades to show the children how to care for their teeth, inasmuch as it is at this age that the temporary teeth begin to decay and loosen. Neglect now may mean irreparable loss in later life.

Have ready on the board drawings of the teeth as they appear in each jaw, and also an enlarged drawing of a a single tooth. Ask the children to come one at a time to the board and find some of the differences between front and back teeth.

Why do we need teeth with thin, sharp edges in front? Which teeth do we use mostly in chewing our food? How are they shaped? What kind of teeth has the cat? The horse?

Bring to the class the tooth of some animal which has been thoroughly cleaned and show the hard smooth substance which covers it. Explain how this keeps the tooth strong and well and prevents it from aching, just as the skin on our bodies keeps them from getting

hurt. Tell the class that this covering is very thin and that if we bite hard substances with our teeth we may crack it or even split it off in places, then the tooth will soon ache.

Show that clean teeth and a clean mouth are necessary because the inside of the mouth is so warm that bits of food left there soon begin to spoil and hurt the teeth. Explain just how the tooth brush should be used, first up and down the teeth, then across them both front and back.

Teach the children to brush their teeth gently but thoroughly after each meal, using a soft brush and plenty of warm water, taking care to clean the back side of the teeth, as well as the front. Show them also how to remove particles from the spaces between the teeth by using bits of floss silk.

Rouse their enthusiasm by telling them the story of Gen. Roosevelt and his Rough Riders as they went into battle at El Caney. How all the luggage had to be left behind except the mackintoshes which protected them from the heavy rains, but they needed their tooth brushes so much that every man stuck his into his hat band and carried it in this way rather than go without it. Form a toothbrush brigade in your own school for each boy and girl to join who will try to take as good care of the teeth as did this regiment of United States soldiers.

Cigarettes Spoil the Teeth.

Arthur's mother has taught her little boy to take care of himself in a great many ways. In warm weather he often goes barefooted, but he always washes his own feet and hands and brushes his teeth before he goes to bed. His hair is pretty long for a little boy to manage, so his mamma combs that for him but he tries not to cry or pull away when she finds a tangled lock.

One night he started up to bed with his arms full. His pet kitten, Muff, and Towser, the puppy, sleep in little baskets just outside Arthur's door. He tried to carry them both upstairs at once and his Noah's ark too, but he soon found this was too much of a load for a little boy, and Towser had to be left behind to do his own climbing.

When his mother came up to tuck him into bed, he asked if Muff and Towser didn't need to have their teeth brushed.

Mrs. Grant told him that dogs and cats know how to keep themselves clean better than anyone can do it for them. They are very neat and nice in all their ways if given an opportunity, much more so than some people. You never saw a dog with dirty, yellow teeth; they are always white and shining like ivory. One reason is that dogs never smoke cigarettes or chew tobacco.

"Too much of a load."

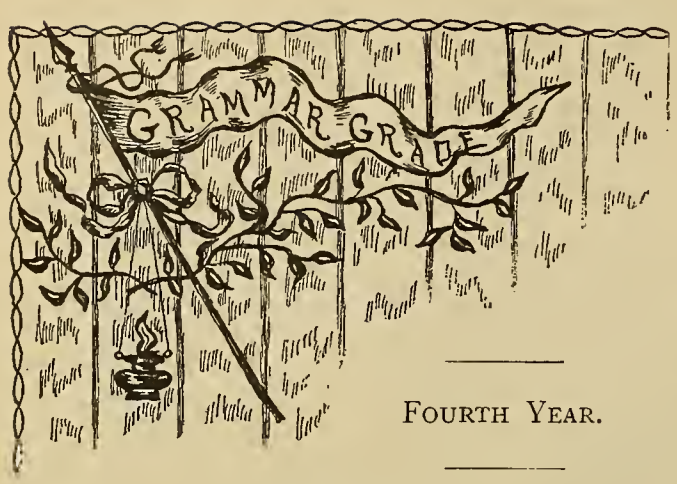
No one who uses tobacco will have nice teeth very long. They soon get to be a dirty brown color which quite spoils their looks. Then they will not come clean no matter how carefully we brush them. There is a strong odor about them too, which no one likes. Tobacco users often spit out the juice on the sidewalks or in other places where people must walk. No one who wishes to be truly clean will smoke cigarettes or use tobacco in any way.

Authoritative Quotations.

Nicotine is one of the most powerful nerve poisons known. Its virulence is compared to that of prussic acid. It destroys life, not by attacking a few but all the functions essential to it, beginning at the centre, the heart. There is no substance known that can counteract its effects. — [The Journal "Science."

The smoker can not escape the poison of tobacco.—Marshall Hall, M.D.

Tobacco contains an active principle, nicotine, which in its pure form is a powerful poison, paralyzing the heart.—H. Newell Martin, M.D., F.R.S.



FOURTH YEAR.

TOBACCO.

NO community can afford the yearly sacrifice of young men entailed upon it by the cigarette habit. Energy and courage are needed in every form of business and these qualities are the first to disappear in the habitual smoker. True to its narcotic nature, tobacco takes the vim and life out of the user; it undermines his character and bars the way to success. Yet so strongly is its use entrenched in custom that every year witnesses the downfall of fresh victims and a corresponding lack of robust workers.

Boys too often have the idea that it is more manly to smoke and take a glass of beer with others than to keep the breath sweet and the brain unclouded. Convince them of their mistake by showing that true manhood lies in the development of strength and virtue, rather than in those vices which sap the body of vigor and rob character of its nobility. "Everybody will have to choose a thousand times and will become at last what his choices make him. No one can be prepared to reach swift and wise decisions, if he has lamed his will by idle indulgence, or accustomed himself to study the world through a cloud of smoke." Youth is bubbling over with vitality and life. Show the boy how to direct this energy into right channels. He is a reasonable being, and continued instruction, if given wisely and sympathetically, will not fail to influence his habits.

THE LESSON.

As the use of text books in physiology and hygiene is usually begun in this grade, special care should be taken to make the transition from oral work easy and natural. Combine text books with oral instruction for the first month, or until the pupils have gained a certain independence in their use. Select topics to begin with that will make the child familiar with the plan of the book and show him how to find what it contains. If the first lesson, as here suggested, is on tobacco, his study of its effects upon health will introduce him to those chapters in his physiology which treat of the heart, the brain, the lungs, in fact all organs of the body which are in any way affected by this narcotic.

Let the morning talk for this day be on the successful man. Select some well known example from the business world, and show how this man, perhaps poor and friendless in his youth, managed to win for himself wealth and fame and position.

In the physiology class, ask your pupils what each means to do when grown to manhood or womanhood. Perhaps one plans to be a lawyer, another an artist, a farmer, an engineer, a teacher and so on through the list. When all have made choices, ask each to go to any successful business man in town whom you may select, and find out from him how he came to succeed so well, then report to the class what he learns.

Howard, for instance, desires to be a merchant. He goes to the proprietor of some large store near by and asks him what he did when he was a boy, in order to get this store and run it successfully, and what other boys must do to succeed as well in the same line of business.

Howard will find that he must have as good an education as he can possibly get. If he is unable to go to school and college, he will have to study harder by himself. He will need the best of health for he will have to work hard, early and late. He will need to save his money and not waste a penny. When Mr. Rockefeller was starting in business, his clothing cost him only $9.00 a year; now he pays a man a large salary just to look after the money he gives away. Howard will need too to know all about the goods he means to sell, and what the people want in this line; then how to get it to them before any one else does. He will need to know how every department of a store is run and how to keep others at work to the best advantage. He must always be strictly honest, and pleasant and obliging as well.

Others will find that similar qualifications are required in the various kinds of business they may choose. Ask each one to write down what he finds to be needed. Have these lists read aloud and ask the class to select from them the points which are the same in all. The result may be written on the blackboard, under the heading:

ESSENTIALS TO SUCCESS IN ANY BUSINESS.

Good health,	Honesty,
Good habits,	Industry,
Good education,	Economy.

Comparison of all the papers and general class discussion will show that no one can leave out any of these things and be sure of success in the business he undertakes. Take up with your class the first of these essentials, and help them to find what things are necessary to good

health. Food will be named as one essential. Show the class this topic in their physiologies. Review with them what they have learned in their oral work about it. Ask them to find all that their books give. Help them to classify foods into animal and vegetable and mineral; to find what foods build up the body and make it grow; what foods repair waste; what ways of cooking food are best for health; how it should be served; what changes in food are required by age, size, climate and occupation.

What things sometimes taken into the body are not foods? Is tobacco a food? Does it give strength and warmth? Does it help the body to grow? Does it hurt any part of the body?

Have the class study the chapter on food for answers to the first of these questions. For the last, show them how to find from the index in their books, the effects of tobacco on each organ of the body: the mouth, throat and lungs; the blood and heart; the organs of digestion, the brain and nerves, the muscles, bones, skin and the special senses. Does tobacco ever benefit these organs in any way? Name all the ways you can find in which it injures the health and prevents growth.

Why is tobacco so harmful to all organs of the body? What poison does it contain? What is a poison? Is there any way in which tobacco can be used without danger to health?

Take up next the second essential to success, and discuss with your pupils the relation between good habits and tobacco. Ask some one to state what he thinks a good habit is and what would be considered as such by any business man. When a suitable definition has been decided upon, have the class write or name all such habits which they can think of. When they have done this, ask why no one has included the use of tobacco. If they were applying for any sort of a position, why would they not give smoking or chewing as one of their recommendations? Why is the use of tobacco forbidden conductors, engineers and other workers on the railroads? Why are clerks in a store not allowed to smoke? Does the manager of a large business establishment wish his employees to use tobacco at any time? What are all the reasons which make the use of tobacco a bad habit and thus a hindrance in business?

Bring out the value of a good education as an element in success, by asking the class how many college graduates they know who are out of work; how many who have had a thorough course of training in any good institution of learning, and yet can find nothing to do.

On the other hand let them try to think of those whom they know in responsible positions who have little or no education. To which of these classes belong most of the unemployed, the tramps and loungers of any town or city? Some in the class will be sure to suggest Lincoln, as an example of a man who had few school advantages and who yet achieved great success. Set them to reading his life and they will find that he was really a well educated man, who studied and worked twice as hard as other boys, because he was not able to go to school and college.

How many well educated men can your class think of who smoke? How many of those without education use tobacco? How many boys have they known to be graduated from the high school, who smoked when they entered? How many from the grammar school? Are smokers or non-smokers more likely to make their grade at the end of the year? Why is this? What has the use of tobacco to do with the brain and nerves? How does it affect the blood which supplies the brain with nutrition; the lungs which furnish the body with the oxygen it needs? Is it possible to obtain the education necessary to success and still use tobacco? How can any boy know he has natural ability enough to take the risk?

Study with your class the quotations given at the end of this lesson, until they understand the force and meaning of each. Ask why a successful business man needs a good memory, a clear, strong brain, ability to decide and act at a moment's notice, if need be. Why does he need a strong moral character, the ability to know right from wrong as soon as he sees it, to be strictly honest in all his dealings, to be absolutely truthful, to have an unfaltering will which nothing can weaken or deter, to have force and decision of character, and a great enthusiasm for the business he has chosen for himself?

When the class, with your help, have answered these questions, have them find from the different quotations, how the use of tobacco will prevent them from securing each of these essentials. When Mr. Rockefeller was a young man, he could not afford to spend any of his hardly earned money for pipes or cigarettes. How much can your pupils afford to waste for a poison, which lessens all their chances of success and fails to help them in a single particular?

Write on the board the saying of Marcus Aurelius: "Nothing harms him who is really a citizen, which does not harm the state," and help the class to think of some of the ways in which the tobacco habit hurts others besides the smoker. Has any one the right to injure his health and make himself a care to other people? Has any one the right to waste his money and run the risk of becoming a pauper or tramp? Can any one fail in business without making other people suffer? How is smoking an impolite habit? What are some of the things which our town and country dc

for us? What do we owe to the state? How can our use of tobacco harm the country?

Oliver Wendell Holmes said that the great thing in this world is not so much where we stand, as in what direction we are moving. Teach your pupils that it is necessary to have convictions, that manliness implies back-bone, and that no one can reach the highest success or live the noblest life, whose vital force is weakened by narcotics.

Cigarette smoking, even in so-called moderation, injures the heart and digestion, and it tends to check the growth. It will reduce a boy's weight below the healthy standard. It will reduce his strength and general vitality, as will appear in his pale complexion and his diminished appetite.—Titus M. Coan, M.D.

No smoker can be a well man.—[London Lancet.

"Then came the Autumn all in yellow clad,
Laden with fruits that made him laugh full glad."

AUTHORITATIVE QUOTATIONS.

Smoking Prevents Development.

I believe no one who smokes tobacco before the bodily powers are developed ever makes a strong, vigorous man.—Fergus Ferguson, M.D.

The habit of cigarette smoking is increasing, even among boys of not more than six years of age. It prevents development mentally, morally and physically.—C. T. Cranfield, M.D.

Smoking Injures the Body.

Tobacco dries the throat and leads to throat disease.—E. O. Otis, M.D.

Tobacco smoking wastes the saliva, causes thirst, and creates a demand for fluids. The palate of the dullest smoker often becomes as thirsty as a sponge, and the inveterate smoker is in danger of becoming a confirmed tippler.—J. Milford Barnett, M.D.

Tobacco smoke makes the air impure. In bronchial trouble, tobacco smoke acts as an irritant to the already irritable surface of the bronchial tubes and keeps up a cough. It also increases indigestion.—Sir B. W. Richardson, M.D., LL.D.

The use of tobacco tends to blunt all the senses, and to weaken the action of all the nerves of sensation. The persistent smoking of tobacco often renders a person almost incapable of distinguishing flavors.—W. E. Baldwin, M.D.

Smoking Destroys Mental Ability.

It is the universal testimony of every observing educator that the student addicted to the cigarette habit is comparatively powerless to perform his duties.—S. I. Graves, Prin. Gram. School, Augusta.

Tobacco injures the user's health, lessens his mental energy, lowers his ideals, and blunts his moral sensibilities. Not one of our young men who uses tobacco has a place among our good scholars. Some exceptionally bright fellows by the use of tobacco have sunk to mediocrity.—George C. Chase, Pres. Bates College.

Tobacco is ruinous in our schools and colleges; dwarfing body and mind.—Willard Parker, M.D.

After making a study of several hundred boys, through a period of ten years, I observed that tobacco, used in any form, destroyed the ability to apply one's self to study, and prevented his comprehending or remembering his lessons. I have not met a pupil addicted to the habit, who will go through a single day's work and have good lessons. I have never had one whose scholarship record was good.—H. H. Seerley, Prin. Iowa State Normal School.

Smoking Weakens Morals.

Tobacco weakens memory, impairs intellectual vigor, producing imbecility and indecision of purpose. It enfeebles moral power, blunts moral sensibility and acts as an opiate upon

conscience. It renders the user less capable of discerning between right and wrong.—Rev. Dr. Bascom.

Tobacco, when habitually used by the young, leads to a species of imbecility. The juvenile smoker will lie, cheat, and steal, which he would not had he let tobacco alone.—L. Bremer, M.D.

One of the worst effects of tobacco, perhaps the worst, is the weakening of the will. I have seen cigarette smokers, who seemed hardly capable of making the choices necessary in their every day lives, and entirely incapable of following any course with energy and decision.—O. H. Drake, Prin. M. C. I. Pittsfield.

The tobacco habit is doing more to undermine the intellectual and moral vigor of native American communities than all other forces combined. —A. F. Chase, Prin. Bucksport Seminary.

THE ATWATER EXPERIMENTS.

SINCE the June issue of the Journal wide spread publicity has been given to a charge that the temperance physiologies used in the public schools teach error in insisting that alcohol is not a food but a poison. The charge was made by Professor Atwater of Wesleyan University, who has performed experiments which he says show that alcohol taken in small amounts is oxidised in the body, and that if thus oxidised alcohol must be considered a food.

It has been shown by competent authorities that simple oxidation of a substance in the body does not make it a food, because other poisonous substances are also oxidised in the body, liberating energy. Thus the last alleged reason for calling alcohol a food is refuted. Moreover, the first requisite of a food as stated in a recent physiological chemistry is that besides nourishing the organism it must have no injurious action upon it.

This can not be said of alcohol except when used in small quantities, and how small these quantities must be in a given case has never been ascertained. In fact this must be said to be unascertainable, inasmuch as it varies with the individual and his temporary condition. Professor Atwater's man in the box was given two and one-half ounces of alcohol per day but no precise observation as to all its effects upon his whole system has been reported. A much smaller quantity than this has been found by experiment in some of the best laboratories of Europe to cause derangement of mental working. A physiological chemist says, "to get energy from alcohol we run great risk of poisoning." Hence alcohol is ruled out of the food list by definition.

Professor Atwater said in his report that the body makes the same use of energy from alcohol that it does of sugar. Recent experiments in the German army have shown that when the men are given sugar as a part of their rations their strength is increased and sustained. Similar experiments in the English army showed that when men received small quantities of alcohol daily their capacity for physical exertion was unmistakably reduced. Here is a discrepancy between Professor Atwater's conclusions and the results of far more extensive experimentation than his own.

The text books are further criticised by Professor Atwater for saying that alcohol is a poison, because, according to his views, alcohol "used in quantities and ways which cause no injurious effects can not be called a poison." It would

"Plains gleam tender in thy splendor, hills are decked with golden crowns,
And the softened light of autumn creeps o'er sleeping dells and downs."

be just as correct a statement, and have just as little weight in a correct classification of poisons, to say that strychina can not be called a poison, because it is sometimes used by physicians in quantities and ways which cause no injurious effects.

Other fallacies in the charge of inaccuracy of the text books will be pointed out in subsequent issues. Meanwhile the American people are not a Rennes Court. They will weigh all the facts before rendering a verdict, and not until evidence is presented which overthrows the testimony of ages, and blots from the land every poor house, insane asylum and prison erected for the victims of alcohol will they declare in favor of teaching their children moderate drinking. "Truth is on the march and nothing will stop it."

TEMPERANCE AND ABSTINENCE.

BY DR. P. J. MÖBIUS.

ALL sensible people are opposed to drunkenness, but some want nothing to do with the direct issue, expecting all improvement to come through a complete social revolution; others wish direct progress, seeing nothing but "the drink curse." Even among those who are fighting alcoholism squarely we may distinguish different attitudes, especially the advocates of temperance, and total abstainers. Both parties want the same thing, namely that the horrors caused by alcohol shall cease. They differ only because the one believes that the same end can be accomplished if, in spite of its moderate use, the abuse of alcohol be discontinued, while the other holds that its use leads necessarily to misuse and that therefore the use should cease altogether. This difference of opinion has often led to serious misunderstandings. The advocates of moderate drinking reproach the abstainers with injuring a good cause by their unreasonable demands. They say that in demanding too much nothing at all is gained, that total abstinence is contrary to nature. But the abstainers respond that moderation is a very relative term; that every one considers himself temperate, and that no one can tell when moderation is going to lead to excess.

It is further claimed that moderate drinkers are the tempters. This severe expression means that alcohol, like other narcotics, is of such a nature that its use may lead to a craving, since by drinking the desire for more drink is aroused and habit plays its part, so that increasingly large quantities are needed to satisfy the craving.

We have a right to expect that the facts upon which the opponents of alcoholism rely shall be resolutely faced, namely the great injury which alcohol does on the one hand, and its utter uselessness on the other. . . . Generally speaking, abstainers and moderate drinkers will agree on these details. There can be no doubt at all of the acute and chronic physical, mental and moral degradation that alcoholism produces. At most one can but glance the other way and because he does not see the misery persuade himself it is not.

In regard to the uselessness of alcohol also, all competent judges are practically agreed. Alcohol does not nourish, does not warm; neither aids digestion nor the ability for mental or physical work. Certain experts still cling to the opinion that quite small quantities of alcohol increase the muscular power very temporarily, or do some other good of the sort. But these discussions over a possible microscopic value of alcohol can in no degree alter the former well proven denials. Practically considered, alcohol always retards and injures the activities of our organism.

He who is truly temperate is bound to rejoice when many are abstinent, for abstinence is only the highest degree of temperance. But it is not speech which matters so much as example. The best example is abstinence, and the warning of the abstainer will have more weight than the speech of him who when he has finished goes to his beer.

Translated for the JOURNAL.

A SUPPLEMENT TO THE SCHOOLS.

EVERYONE is interested in a movement which improves the character and intelligence of young men. Such a work has been carried on for the past five years by the international committee of Young Men's Christian Associations, through definite and systematic class work with examinations which admit students to higher institutions of learning. One hundred and six leading colleges and universities of the United States now accept these international certificates.

The aim of the committee is to foster study among those who are employed during the day, to aid local associations in arranging courses of study for their own members, and to raise the quality of work done in each subject to a recognized standard. One hundred associations, including the leading organizations, took part in the fourth annual examinations held last April, and nine hundred and seventy-one papers were accepted as satisfactory by the committee. Eleven of the Young Women's Christian Associations also took part, and forty certificates were won by their students. The annual prospectus for 1899 shows six new courses added for the current year, with exceptionally able men secured as international examiners. Every young man with ideals, if unable to attend school or college during the day, should take up one or more of these study courses in his own association, and thus fit himself for higher positions in business and in life.

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"Sunshine, shadows, hazy meadows,
Heavy shocks of golden grain,
Orchards bending, sunlight blending
With the blushing fruit again."

AN UNFOUNDED CRITICISM.

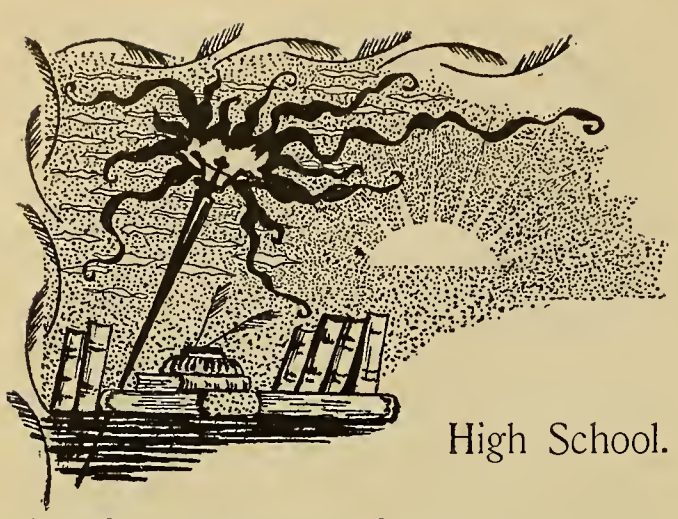
THE critic, quoted on another page, who says the indorsed temperance physiologies "have been put into our public schools owing to the zeal of the few and the carelessness of the many," is behind the times. Every one conversant with the educational history of the past seventeen years knows that fully seventy million people in these United States, through their representatives in the National Congress and their state legislatures, have said with the solemn emphasis of law that all their children in all their public schools shall be taught the nature and effects of alcoholic drinks and other narcotics in connection with physiology and hygiene. The public school children of every state but three, and of every territory in the Union and of the District of Columbia, are under more or less stringent laws requiring this study. As these laws began to go into force the question arose as to what should be taught concerning the nature and effects of alcoholic drinks and other narcotics. Therefore, in 1887 a syllabus of facts established by modern investigation was prepared by competent experts and signed by more than two hundred representative names in medical, chemical, legal, legislative and philanthropic circles in this country, as a standard for school literature of this kind.

The indorsed books on physiology and hygiene used in our schools conform to that carefully prepared and widely indorsed standard. As the influence of this wide-spread education began to be felt, certain of the self-indulgent classes whose habits are reproved by this public school instruction began to object that these text books were inaccurate. Therefore in 1897, at the request of friends of this form of education from temperance societies, churches and other organizations and individuals interested in the public good from many parts of our own country, a committee of eminent medical men, most of them representing medical colleges, was invited to examine these books carefully and point out any statements they might contain which were not supported by scientific authority, in order that any such errors found might be corrected.

Not one of these eminent men, after careful examination, pointed out a single statement in any of these books which called for correction. Their report was corroborated by eminent authority in Europe. In addition, a committee of three physicians, three educators, and three teachers of ethics permanently represent a national society to guard against any errors creeping into the instruction given in these books. All these facts have been widely given to the public as they have transpired. In view of this, our critic shows an unaccountable forgetfulness or ignorance of current history. On the title page of some of the indorsed books are names better known to science than those of their critics. The fact that every spelling book does not bear the name of Noah Webster does not condemn it, provided its teachings are in harmony with the standards of great lexicographers. Neither does the absence of a great name on every child's book in physiology condemn that book, if it is in harmony with accepted standards, as are all the indorsed books on this subject. Criticism to the contrary is far-fetched and ridiculous.

IT is not to be expected that truth which rebukes a popular evil will always be met with a cordial welcome. It is not strange therefore that attacks should be made from time to time upon the teachings against alcohol. These criticisms, as they charge first one thing and then another, show the growth or the need of growth, of public intelligence on the subject. A few years ago the books were accused of suppressing part of the truth because they failed to state that a little alcohol makes a man feel comfortable and gay. To this we replied that if comfort and gayety were all that a little alcohol had the power to give, it certainly ought to be emphasized. But inasmuch as it is the nature of alcohol, taken even in small amounts, to create the incontrollable appetite for more which makes it at last "bite like a serpent, and sting like an adder," a vivid picture of the drinker's first pleasurable excitement would be but an invitation to destruction. It would be as morally wrong as to set forth the joy of possessing stolen goods to a boy surrounded by temptations to steal.

And now come another set of criticisms equally unfounded which are met elsewhere in these columns. We welcome them because it is thus that a new idea grows, and the public mind is clarified until it no longer questions, and even forgets that it ever had any doubts about that special truth.



High School.

PRACTICAL QUESTIONS ANSWERED.

IT is somewhat startling to be told by a specialist in mental diseases that sanity is self-control and insanity is its absence, but reflection convinces even the skeptical that the most highly trained minds are those of men who best control the thoughts and impulses of their natures, and whose bodies are trained to implicit obedience to the mind.

A splendid young fellow aglow with health and the joy of right living once stood np to address a meeting. Just as he began, a pitiful wreck of humanity tottered to the platform and looked down into the wondering faces of the audience. "I'm not going to say much," stammered the newcomer, "but I want you to look at us two as we stand here, side by side. Doesn't take much time to decide between us, does it? And I might have been like him !"

Such sharp contrasts face each other every day upon the platform of life, and teach their own sad lesson. The difference far back in the sunny days of childhood is slight, but it grows with every loosening of the reins of self-control until eternity alone can be its measure.

To those who have kept in touch with scientific research and discoveries relative to the effects of alcohol upon the human organism, and who have seen with their own eyes the power of this narcotic to dethrone reason and judgment and to debase character, the necessity for right instruction in temperance physiology comes home with increasing emphasis. The power to impair intellect lies in the first glass of intoxicating liquor. This first glass may lead to such loss of self-control as to bring even the lad of greatest possibilities under the final control of base impulses and passions and bar the way to noble manhood. A substance which possesses in itself the power to work such harm needs no further proof to convince the impartial mind of its poisonous nature. The child, the young man, the adult, must have this side of the picture shown him, as well as the alluring colors with which saloon keepers and dissolute companions seek to dazzle his eyes and beguile his mind.

One of the most important questions for every young man to decide is the stand he will take regarding alcoholic liquors. He does not know enough of life to realize the danger lurking in the social glass of beer or wine. Parents and teachers must help him to choose wisely. The question taken up in this lesson, strikes at the very root of the matter. Furnish him with the needed material and require him to work out its answer for himself. To do this he must first consider other questions: What is a poison? How does it affect life and health? How can we determine whether a given substance is poisonous in its nature? How does alcohol affect the different organs of the body? Health? Mental power? Character? Business ability and success? Self-control? What danger lies in the first glass of beer? Why is the man under the influence of intoxicating drinks unable to govern his own thoughts and acts?

Take up these vital questions with your pupils. Study with them the writings of acknowledged experts, the testimony of physicians, of insurance companies, of railroad corporations and of business men everywhere. Call their attention to the relation which exists between crime, pauperism and insanity, and strong drink; not arbitrarily, but in such a manner that they can but form their own conclusions, and shape their own future wisely.

Is Alcohol a Poison?

Notwithstanding the apparent impunity with which diluted alcohol in the form of various liquors may be taken, pure alcohol is rapidly and certainly fatal, when taken into the stomach without dilution. Alcohol in every form is still a poison, the rapidity of its effects being largely determined by the degree of dilution in which it is introduced into the system.—J. H. Kellogg, M.D.

Alcohol is always a poison, whether diluted or undiluted. The high death rate of drinkers proves that alcohol is a poison, and the number of diseases due to alcohol is a proof that it is a dangerous nerve poison. Total abstinence from alcohol is one of the greatest roads towards hygiene, and attainable well being.—A. Vickery, M.D.

British statistics prove that total abstainers from wine, beer and spirits live longer—perhaps ten years longer, if they commenced at twenty, than persons who use alcoholic drinks. This tends to prove that alcohol is a poison, not a food, and that all use of it is abuse.—C. R. Drysdale, M.D.

Ethyl alcohol is a poisonous matter, both for the human and animal organism; its venomousness increases with the amount and frequency of the doses. But even when partaken of in the most temperate way it plainly inter-

feres with the functions of the various organs. —[British Med. Temp. Review.

Alcohol is a poison even in small doses.—Drs. Thudicum and Duprè.

Alcohol is a powerful protoplasmic or tissue poison, acting primarily on the cellular elements, just as opium, mercury, phosphorus and arsenic. Its action, as classified by all chemists and toxicologists, is really that of a narcotico-irritant poison. — Capt. P. W. O'Gorman, D.P.H., Cantab.

Alcohol is a poison of which the habitual use destroys, more or less quickly but inevitably, the organs most necessary to life; the stomach, the liver, kidneys, arteries of blood, the heart and the brain.—Dr. Legendre.

Alcohol is a poison. So is strychnine; so is arsenic; so is opium. It ranks with these agents. Health is always in some way or other injured by it; benefitted by it — never.— Sir Andrew Clark, M.D.

Alcohol, even in small doses, is inimical to healthy life and life processes. Alcohol is a cause of dissolution. Its tendency is to premature decay and death.—Norman Kerr, M.D., F.L.S.

Alcohol acts as a direct poison by impairing the oxygenation and oxygen-bearing properties of the blood.—L. F. Cope, St. George's Hospital.

Alcohol is a corrugator and paralyzer of the living tissue, as well as a narcotic poison.—I. N. Quimby, M.D.

The action of alcohol on the nervous system is that of a depressant, narcotic poison.— W. V. R. Blighton, M.D.

Compare the numerous deaths occurring among us from poisoning by prussic acid, carbolic acid, arsenic, lead, and other non-alcoholic poisonous substances, and you will find that the fatalities from these, all taken together, are few in comparison with the forty thousand and over that we have seen are attributable to acute and chronic alcohol poisoning.—N. S. Davis, M.D., LL.D., F.R.S.

Alcohol poisons the nerves and diminishes their sensibility. Humanity cannot adapt itself to such poisons. It will set its use aside or degenerate. We will not degenerate but become higher and better.—August Forel, M.D.

Alcohol is physiologically and psychologically not the friend but the enemy of man; undermining his bodily structure, diminishing his health, impairing his muscular activity and capacity, and shortening life. The tendency of alcohol is to be a body destroyer and a brain beguiler.—Norman Kerr, M.D., F.L.S.

A HEARTY WELCOME.

TO our readers, the teachers, we extend a cordial welcome as you return again to your duties in the school-room. New minds await you to be taught old truths, or the same faces to be lightened with increasing intelligence as you lead them farther on in the search for knowledge. Exhortations from many sources come to you concerning your responsibility. We will not emphasize this except to add that you can not too deeply realize your golden opportunity.

We earnestly hope you have brought from the heart of nature some of her deeper meanings as you have communed with her in your vacation ramblings; that you have learned how she develops and perfects her productions, that she is never satisfied with the incomplete, that she is ever striving for the ideal as favoring conditions lift her products higher and higher towards perfection. Apply this and note how it refutes certain criticisms on temperance education now in the air, and expressed in the following question:

"If you teach the children in the public schools that alcohol as found in wine, beer, cider and other liquors is a poison, and they see their parents drinking it and still living, will it not destroy their confidence in all instruction and teach disrespect to parents?"

If the children are properly taught the meaning of the term poison they will know that small amounts of alcohol do not ordinarily produce immediate death but that the great peril in its use is its power in small amounts to create a destructive appetite for more with all its evil consequences. They will know that although the growth of this appetite may vary with the individual the peril inheres in the drink itself. If we are never to teach one generation anything that will rebuke the habits of its predecessors there will be no progress. We teach correct expression to children who hear their parents murder the Queen's English, and obedience to laws of health their parents ignore, because it is our duty to help posterity to higher forms of expression, and to physical and consequent mental and moral development. To object to this is to object to Nature's method in human progress.

Little Mary, aged five years, was greatly interested in the story of the good Samaritan, as related by her Sunday-school teacher. Upon her return home she gave her mother a vivid account of the selfishness of the priest and the Levite. "But," added she, "by-and-by a good American came by and helped the poor man!" —[Western School Journal.

TOPICS FOR THE YEAR.

	Grade I.*	Grade II.*	Grade III.*	Grade IV.	Grade V.	Grade VI.	Grade VII.	Grade VIII.	High School.
Sept.	Standing, sitting, filing, marching. Body as a whole. Cleanliness.	Food and drink; table manners.	Position. Bones; joints.	Tobacco.	Drinks containing alcohol.	Review work of fifth year, especially alcoholic drinks; food; digestion; circulation.	Heart and circulation.	Review work of seventh year, especially heart; lungs; tobacco; alcohol.	Fermentation.
Oct.	Apples and cider. Grains — right and wrong uses.	Sense of taste. Sense of touch. Skin; uses and care.	Muscles. Ease and grace in movement.	Brain and nerves.	Food.		Respiration.		Drinks containing alcohol.
Nov.	Growth, height and weight. Cigarettes and tobacco.	Sense of hearing. Grapes and wine.	Organs of breathing. Ventilation.	Special senses.	Digestion.	Bones.	Tobacco and other narcotics.	Special senses.	Nervous system.
Dec.	Water. Grapes and wine.	Sense of sight; care of the eyes.	Food and drink. Stomach and digestion.	Heart and circulation.	Heart and circulation.	Muscles.	Origin and nature of alcoholic drinks.	Nervous system.	Cells and tissues.
Jan.	External parts of trunk; care.	Sense of smell. Apples and cider.	The blood and its work.	Bones and joints.	Respiration.	Heat and cold.	Food.	Skin and lungs.	Bones and muscles.
Feb.	Head with its parts: face; eyes; nose; mouth; ears.	Review of the senses; care and training they need.	Nerves and brain.	Muscles.	Brain and nervous system.	Special senses.	Digestion.	Kidneys.	Special senses.
Mar.	Upper limbs: arms; hands; fingers.	Parts of the body; how to get and keep a strong, healthy body.	Review senses. Tobacco and cigarettes.	Exercise and rest.	Tobacco.	Organs of excretion.	Bones.	Organs: uses; care.	Food and digestion.
Apr.	Lower limbs: legs; feet; toes.	Tobacco and cigarettes; effect upon growth.	Review parts of body.	Food and digestion.	Skin.	Alcohol and tobacco.	Muscles.	Cell life and growth.	Circulation and respiration.
May	Food and rest. Review parts of the body.	Beer and other alcoholic drinks made from grain.	Review bones; muscles; breathing. Alcoholic drinks.	Skin. Alcoholic drinks.	Review alcoholic drinks; food; digestion; heart and circulation.	Review all fifth grade topics.	Review of heart; respiration; tobacco and alcoholic drinks.	Review all seventh grade topics.	Organs of secretion and excretion.
June	Review food; good and bad drinks; cigarettes.	Review topics of the year.	Review food; blood; brain and nerves.	Review all topics of the year.	Review respiration; brain; nerves; tobacco; skin.	Review all sixth grade topics.	Review of food; digestion; bones and muscles.	Review all eighth grade topics.	Review year's work.

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PRIMARY—Standing, sitting, filing, marching. Body as a whole. Cleanliness. Food and drink; table manners. Position. Bones; joints.

INTERMEDIATE — Tobacco. Drinks containing alcohol. Review of fifth year work.

ADVANCED — Heart and circulation. Review of seventh year work. Fermentation.

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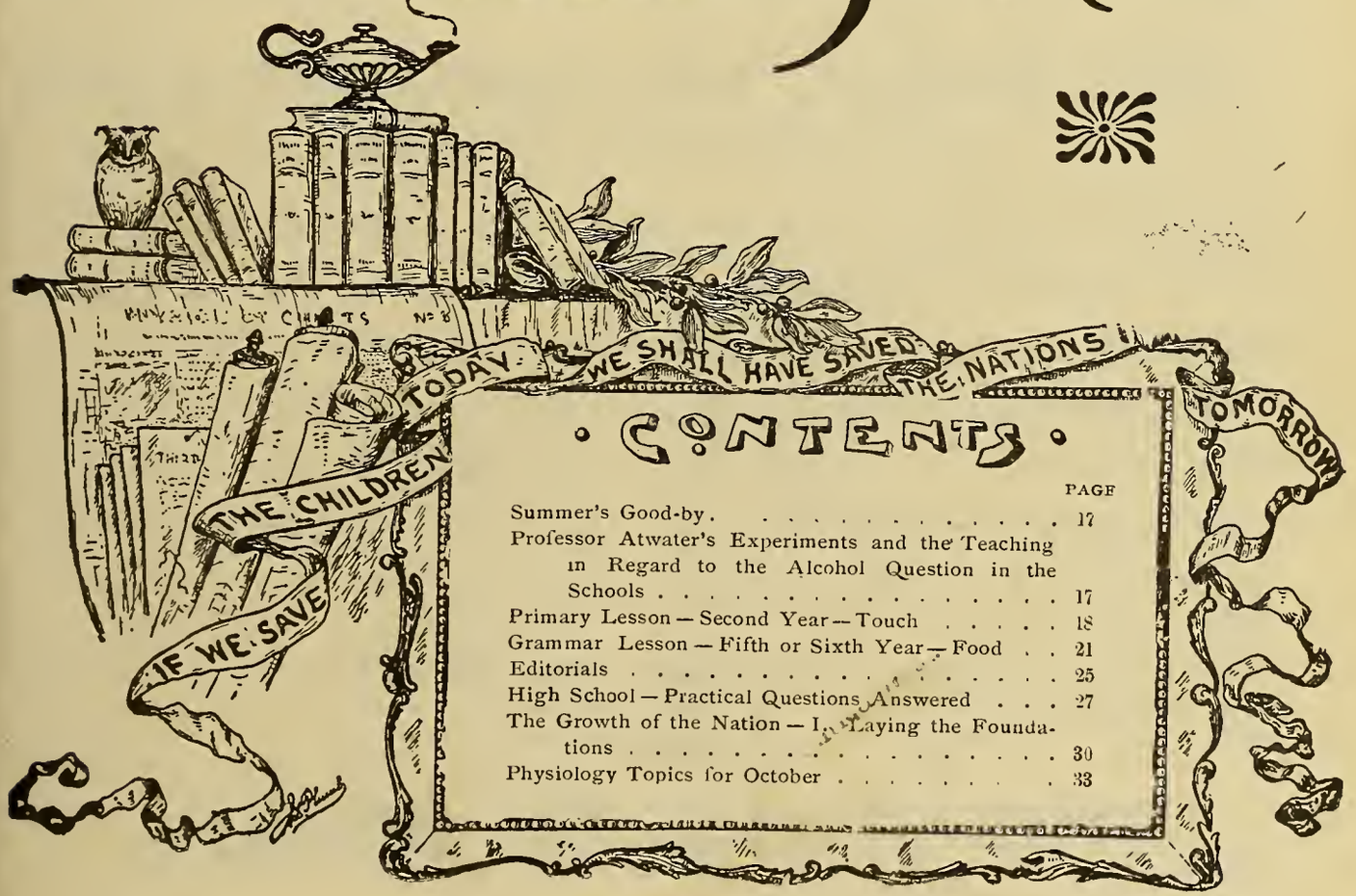
The School Physiology Journal



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PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, EDITOR.

VOL. IX. No. 2
OCTOBER, 1899.

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School Physiology Journal

Vol. IX. *BOSTON, OCTOBER, 1899.* *No. 2.*

SUMMER'S GOOD-BY.

All of the reaping is over and done;
Green are the pastures and still;
Warm lies the earth in the smile of the sun,
Brooding on meadow and hill;
Hardly a leaf by the light breeze is thrilled;
Wide is the peace of the sky;
Yet in the silence the Summer, fulfilled,
Whispers her children, "Good-by!"

—PRISCILLA LEONARD, in The Outlook.

PROFESSOR ATWATER'S EXPERIMENTS AND THE TEACHING IN REGARD TO THE ALCOHOL QUESTION IN THE SCHOOLS.

THE recent experiments of Professor Atwater are of great interest to physiologists and chemists since they throw much light upon one of the doubtful questions of physiological chemistry or pharmacology, that of the metabolism of alcohol in the body.

It is a mistake to think however, as some people apparently do, that the result of these experiments should change the teaching in the schools in regard to the use of alcohol from a hygienic point of view. The schools teach that the use of alcoholic liquors, as a beverage, is not justifiable under the laws of hygiene. The result of Professor Atwater's experiments does not contradict this teaching.

These experiments merely show that the body can derive some energy from alcohol. This does not in itself entitle alcohol to be placed among the food substances in the hygienic sense of the term, which is the sense in which the schools and people in general use the term food. If it did, such a violent poison as muscarine, the active principle of the poisonous plants of the mushroom family, would have to be classed with the foods, since it also is oxidized in the body with liberation of its contained energy.

To class a substance among the foods we must know that the sum total effects of its use are beneficial to the body. Muscarine is not a food because its poisonous effects offset the benefit of the energy which it liberates. Alcohol has poisonous effects, as Professor Atwater himself admits. The question as to whether it can be considered as food depends entirely upon whether its beneficial effects are greater than its poisonous effects. Professor Atwater's experiments do not prove this. Until this is proved the burden of the proof is against those who would include alcohol in the list of food substances. For scientific experiments thus far—experiments upon large bodies of men in the ordinary conditions and vicissitudes of life, in the armies, and in exploring expeditions where labor and exposure have to be endured, indicate that when the regular "moderation" quantity of alcohol is taken, the harmful effects offset the beneficial ones and the drinker is made less fit rather than more fit to work.

Stronger still is the reason against speaking, as Professor Atwater does, of alcohol as food in the same sense as sugar. For people generally will interpret this to mean that it is a food equally to be recommended with sugar and ordinary hygienic foods. And this, as Professor Atwater will agree, is an entirely false idea and one calculated to do much harm. For while we get our energy from sugar without risk of poisoning, to get energy from alcohol we run great risk of poisoning, and to get any amount, such as would be necessary to support life in ordinary conditions, we must take enough alcohol to poison ourselves seriously. (By poisoning is meant some harmful effect upon the functions of the body).

The foregoing dangers in the use of alcohol, also the possibility of the formation of the alcohol habit, make its use as a beverage unjustifiable even if there were no other arguments against it.

It is unfortunate that the alcohol question has been brought upon this technical ground. The question of the hygienic status of the use of alcohol is not dependent upon the settlement of the exact definitions of a food and of a poison. The controversy upon this point has produced statements upon both sides which have given rise in the public mind to great misconception.

Both sides in this technical controversy will agree in regard to the main question, that children should be taught to look upon alcoholic liquors as dangerous substances, to be avoided from considerations of health and general welfare.

In the present light of our experience and of scientific investigation, the school books must continue to exclude alcohol from the list of substances desirable as foods, and to teach the avoidance of this substance as a good hygienic rule.

HENRY F. HEWES, M. D.

Boston, Mass., July 5, 1899.

Primary Lesson.

SECOND YEAR.

THE SENSE OF TOUCH.

"I KNOW why flowers grow," said a little boy to his mother. "It's because they want to get out of the dirt." The child's growth under normal conditions is as steadily upward as that of the flower. He too wants something beyond what he has already attained and is continually reaching out after it.

One of the greatest joys in life is the sense of power which comes with the mastery of some difficult problem. It may be a mental victory or the construction of some piece of handwork, but whatever the guise in which victory is won, it is always with a feeling of exultation that we find ourselves able to do to-day what was beyond our reach but yesterday or last week.

To the child, these moments of joyful success must come often or he grows discouraged. Give him frequent short tasks to stretch but not strain his powers. Eye and brain are developed by manual labor as well as by the use of books. During the first few years of school life therefore, provide much work and play which call for bodily exercise, and which teach the child to use his limbs to the best advantage.

The topic chosen this month for development will naturally follow lessons on the hand and its use, and should be taken up after the children have learned how to use this organ properly, and are familiar with some of the ways in which it can be trained to ever better work.

WHAT WE LEARN THROUGH TOUCH.

Before it is time for this lesson to be given, collect a number of objects having different qualities of surface or material; those, for instance, which are hard, soft, smooth, rough, cold, warm, heavy, light, for use in teaching the sense of touch. Later on in their school life the children will learn to distinguish between the sense of touch proper, and temperature and muscular sensations, but in primary grades such close classification would generally be confusing and thus unwise. It is therefore not attempted in this lesson. If many of the objects chosen are unfamiliar to the class, place these on a low table and begin the exercise by calling all the children about it to examine them. Let some of the articles be bright-colored silks and woollens, and others samples of fruit and flowers which will attract and please.

Ask how many know the name of every object on the table. Who does not? Let each one examine carefully a substance he does not know, finding out how it looks, smells, and feels to the touch, until all are familiar to him. Then blindfold the children in turn and ask them to tell these different objects apart simply by handling them. A little practice will enable each to tell silk from cotton, apples from pears, glass from stone, and so on throughout the list.

When all can do this readily help them to compare objects; to tell how they know a peach from an apple of the same size, a marble from a plum, a fur rug from straw matting.

Teacher — "Find a triangular block by touch alone; one that is square, round, oval. What have we learned about these blocks by feeling them?"

When all know that one can tell the shape of things by touching them, write this statement on the board to help the memory:

The sense of touch helps us to know the form of an object.

Teacher — "What else can we learn about things simply by touching them? How do you know that this is a piece of flannel and that a bit of cotton? How can we tell brussels carpet from oil-cloth if we do not look at either? a file from a knife blade? the bark of a tree from the leaves? What new fact about objects have we learned from touching these things?"

Give further illustrations if necessary, allowing the children to describe their own sensations in each case, until they know that some objects feel smooth, others rough, and that we learn these qualities by the sense of touch.

Teacher — "Is this glass tumbler smooth or rough? Tell me without touching it. How did you find out? What other sense besides touch helps us to know whether objects are rough or smooth?"

Sight and touch help each other in this, but if we could use only one we should choose touch because that is less likely to be mistaken.

The class will be ready now for the second blackboard sentence. Write it in their own words if possible:

The sense of touch helps us to know whether objects are rough or smooth.

Teacher — "Here are two glasses of water which look just alike. Harold may see if he can find any difference between them and tell us about it."

Harold — "The water feels warm in one glass and cold in the other."

Teacher—"How many have ever played snow-ball? Is snow cold or warm? Can you tell just by looking at it? How do we know?" How do you know whether a flat-iron is hot or cold? ice cream? the flame of a candle? What is the third thing that the sense of touch tells us about objects?"

The sense of touch helps us to know whether objects are cold or hot.

How much can we find out about a ball by touching it? a piece of ice? a pineapple? a crayon? the books on our desks? the door?

Continue this exercise with other familiar objects until every child has had an opportunity to review all that he has learned about the sense of touch.

Have ready next two bottles of the same size, one empty and the other filled with water, or two covered dinner pails, one empty and the other full of pebbles or some other heavy substance. Call upon the children one at a time to lift both pails or bottles, and describe the difference. What sense tells us that the bottles are not alike although they look so? How do we know that iron is heavy? that down is light? that a rubber ball weighs less than one of the same size made of lead?

Let the children handle small articles of various kinds until they can easily distinguish the difference in weight, and can tell you also how they found out. Then write on the board the statement of this new fact:

The sense of touch helps us to find out about the weight of objects, whether they are heavy or light.

Let the children have a game of blind-man's-buff until they can recognize one another by the sense of touch, and can also tell how they know May from Esther, or George from Lewis, when they can not see them or hear them speak. Give each child blindfolded some article which he has seen before and let him try to tell what it is from the sense of touch alone; then ask him to describe it.

Allow the children, two or three at a time, to move slowly about the room with eyes closed, until they can recognize the different articles of furniture by touch and can name the qualities each possesses.

Review the work of this sense in as many other ways as you have time, until the class can describe quite correctly the shape, surface, temperature and weight of all familiar objects, and can compare them with reference to these qualities. Give a memory drill at this point by asking the children to try to recall how fur feels to the touch, also snow, putty, molasses, pitch, a marble, wood, and any other substances they have recently handled. Thorough training in work of this kind, and practice in trying to describe the different sensations felt or remembered, will not only make the sense of touch more delicate and helpful to each child, but will greatly aid in developing his mental powers.

Almost ready for the Kindergarten.

THE ORGAN OF TOUCH.

Teacher—"How can we find out that an orange is round and an egg oval when our eyes are closed? Where is our sense of touch? Could we tell anything about objects if we had no hands? Are our feet of any use in this? If we lay an object against our cheeks, or on our arms can we tell anything about it?

"Kate may stand with her eyes closed, while I tap different parts of her body lightly with my pencil. Which parts did I touch? What parts of the body have no feeling?"

Experiment with the children until they know that this sense is in the skin, and present in every part of the body except the hair and tips of the nails. Let them find out for themselves in what parts of the hand the sense of touch is most delicate. Tell them the ever new story of Helen Kellar, and how she has succeeded in passing the Harvard examinations for entrance to Radcliffe College by cultivating her sense of touch to the highest possible degree, and through this sense her mind. They will be interested also in hearing about Capt. Nat. Herreshoff, one of the famous boat builders of the world. He has been blind ever since he was a boy, and

yet has trained his sense of touch so thoroughly that he knows more about boats than most people who can see, and has even helped to build some of the boats which have won the American cup in our famous yacht races.

WHAT A BLIND MAN DID.

Here is a true story about another blind man who lived in Ohio. He was a carriage-maker and worked at his trade until he was about thirty years old. One day while he was at work a piece of iron struck his eye and destroyed the sight. By and by the sight of the other eye began to be affected and he lost that too.

He did not grow discouraged, because he had two dear little children, and the thought that he must take care of them made him feel that he could work even without his eyesight. He went back to his shop and after a little found he could do many kinds of work as well as before.

Both the children's birthdays came on the same day so they called themselves the twins, although Helen was three years older than her little brother. When she was seven years old and Roger four, their father made them a little cart and taught Leo, the big black dog, to draw them up and down the road.

Leo had a harness made just to fit him and he was very proud when he could have it on and go out with the children. Don't you think they must have had pretty good times together?

"Our papa doesn't need eyes in his head," said Helen and Roger one day to some of their little playmates, because he can see with his fingers. Anyhow, he can make nicer things than other people's papas who have eyes. And we see for him every time he wants us to, 'cause he's the best papa in the world."

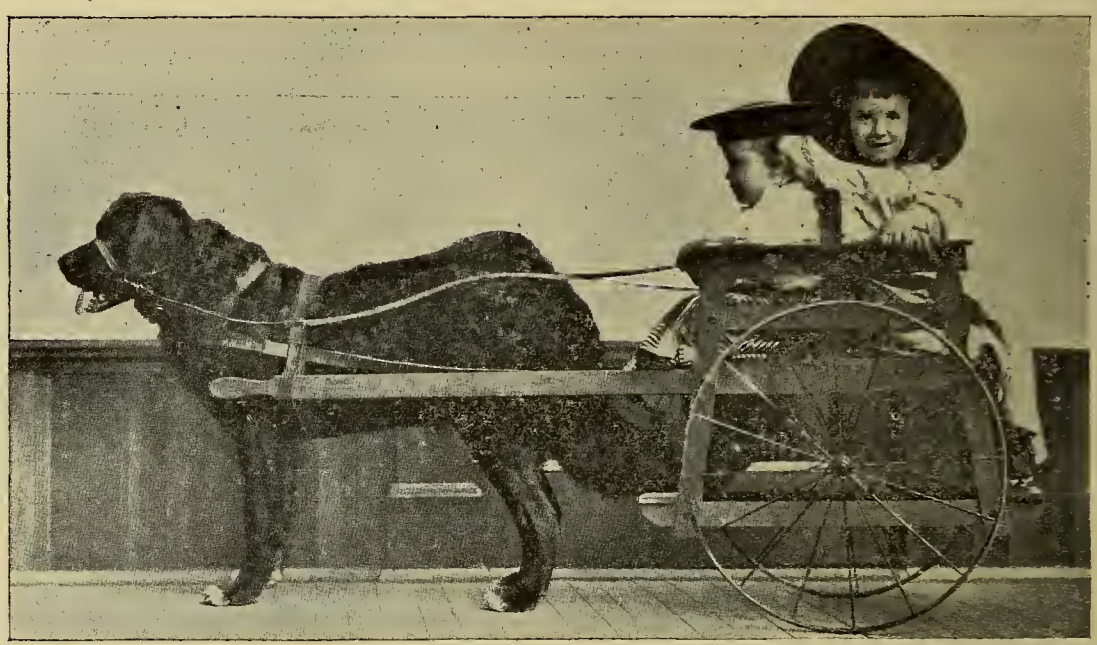
CARE OF THIS SENSE.

Teacher—"What did Helen and Roger mean when they said their father could see with his fingers? Can we see with ours if we try as hard as he did to train them? In what kinds of work do we need a delicate sense of touch? How can we keep it delicate? How shall we take care of our hands? our nails? Why do blind people usually have a finer sense of touch than others? Do we need to lose our eyesight in order to give our sense of touch proper training?"

EFFECT OF ALCOHOL ON THE SENSES.

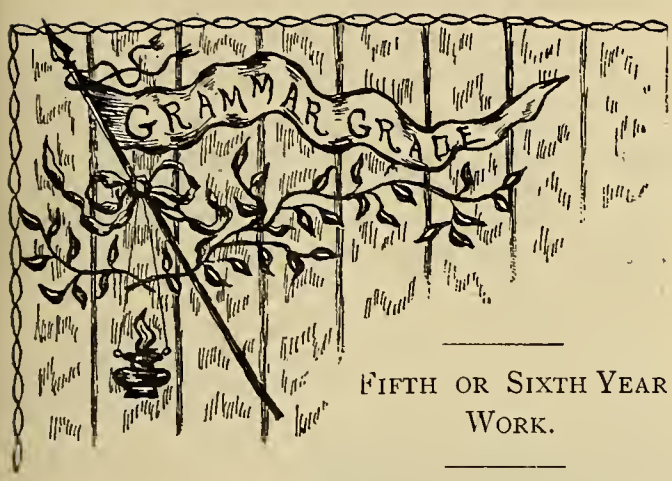
Careful experiments on the sense of touch, on the muscular sense, on sight, on hearing, on simple reaction to a given signal, on discrimination of signals, on the selection of the appropriate reply to a signal, have all shown that rapidity of perception or discrimination is invariably diminished, even by exceedingly small doses of alcohol. And the significance of the experiment is rather increased by the fact that the subject of the experiment is deceived all the time into the belief that his perceptions are quickened.

When it is considered that this occurs with doses too small to produce any effect appreciable, otherwise than by instruments of precision, it affords a strong presumption in favor of the belief that the action of alcohol is the same in kind from its earliest to its latest stage.—T. Morton, M.D,



"Don't you think they must have had pretty good times together?"

"There is no chance, no destiny, no fate,
Can circumvent, or hinder, or control
The firm resolve of a determined soul."



FIFTH OR SIXTH YEAR WORK.

FOOD.

THE foreigner who visits America is amazed at the variety and excellence of our food products. He finds granaries and markets overflowing with the riches of our great prairies, and upon every workman's table luxuries possible only to the wealthy at home.

From this abundance of natural supplies he turns to the American people. Does he find a race commensurate with this wonderful food supply, men and women of keener intellects, stronger bodies, rarer souls than their kinsmen in less favored lands? A few decades ago we should have been obliged to answer this query in the negative, but according to a distinguished Italian physiologist who has recently visited this country, the American youth are now more than holding their own with the children of Europe. He says:

"It is enough to look at the passers-by in the American streets to be convinced how much stronger and better developed they are than our compatriots. America teaches us by the plainest and the most impressive of examples that physical education may be carried to perfection without any military object."

There is no question but the average family in this country is better fed, and consequently healthier and longer-lived, since the introduction of physiology and hygiene into the schools, but the mission of this study is not yet ended. So long as in the school room and out of it can be found even a remnant of that class of thin, nervous, over-strung individuals constituting a type of Americans formerly but too well known, there will be need of better and more practical instruction in the principles of dietetics.

It has been asserted that bad cooking is responsible for more of the world's misery than is drunkenness. This statement is sadly true if we rank in one class every victim of alcohol who might have lived a sober life had he been brought up on well-cooked, nutritious food, and in the other, only those who with every advantage of diet yet formed the uncontrollable appetite for intoxicating drinks.

This is an age of strenuous endeavor in all departments of life, and one in which every expenditure of effort calls for its equivalent of nourishing food. No topic in hygiene needs more careful study than the selection and preparation of that which will best make good the daily loss, and no study will better reward the labor of the student. Interest your pupils in the subject by every means in your power, and happier homes, untouched by the blight of intemperance, will be the heritage of the future.

NEED OF FOOD.

One of the first questions which occurs to a class of intermediate pupils beginning the study of this topic is, "Why must we eat day after day with unfailing regularity? What does food do for us?"

Let this be the vantage point from which to take up the subject. As material, show pictures of a tiny elm or oak tree and others of the same kind of tree of several years' growth; pictures of hens and chickens, kittens and their mothers; or write on the board in one column the names of different young animals and opposite these the names of their grown-up representatives. Ask the class to point out the differences in each case and to explain them as far as they can. In what respects is the calf unlike the cow? the puppy unlike the dog? Why do not healthy plants and animals remain the same from year to year? What are some of the conditions on which their growth depends? What kinds of food are needed by animals? Where do plants get their food?

Compare with your pupils one of the children in the primary grade with another in the high school. How do the two differ in height, size, weight, strength, ability? What are some of the things a man can do? How does he acquire size and strength?

How does a foot-ball trainer put his team into condition to win a game? What sort of bodies have some of the greatest thinkers in the world possessed, such men, for instance, as Gladstone or Phillips Brooks? What kind of food helps to give strength and growth?

Why does the man need food after getting his growth? Why does a boy feel hungry after a ball game? Why does a bicycle sometimes need to be sent to a repair shop? How does the human body differ from a machine in ability to repair its own injuries? Tell the class that if a boy weighs seventy-two pounds he loses, or gives off as waste matter, about three pounds every day. Why then does he not grow thinner all the time instead of larger and stouter? How much food does he need to make good all this waste? What kind of food must he have? Why does he need to eat at regular times? Why is eating between meals unwholesome?

Bring a thermometer into the class and let the pupils take the temperature of their own bodies, testing under the arms or tongue as physicians do. Why is the body warmer than the furniture in the room? Why does one feel warmer after running or walking rapidly? Is there any heat in the clothes we wear? Why does extra clothing make one feel warmer? What kinds of food give most heat? What kinds should be used mostly in winter or in cold countries? In the tropics or in summer?

SELECTION OF FOOD.

Ask each member of the class to name an article of food which belongs to the animal kingdom, a vegetable used as food, a mineral needed by the body. What is the special advantage gained from the use of each? Why is it better to eat different kinds of food at the same meal? Make out lists of foods that go well together and give reasons for each choice. What foods aid the growth of the body and repair its waste?

What foods give power for work? How is the heat of the body kept up? Why do we need to drink plenty of pure water? What starchy substances are used as foods? How are they changed in the body? Why do we need starch and sugar foods? What are the best fats for food? When are they most needed by the body? Why would not potatoes alone be a good food? cake?

Many pupils in these grades are trusted wholly or in part to do the family marketing. One or more days may profitably be spent in studying how this can be done most advantageously, and with least expense. Appoint some members of the class to visit the markets, and others the vegetable and fruit dealers and find out from them what foods are in season and their relative prices. When their report is ready ask each pupil to write a bill of fare for dinner sufficient for his own family, selecting foods which will supply the waste of the body and provide for its other needs. Limit the expense to twenty cents a person. Select some of the papers to be read aloud and talked over by the class. The pupils should decide so far as possible whether each bill of fare submitted answers all these requirements. If their own text-books fail to throw light on any disputed point, the teacher may refer them to some more advanced work, or may herself act as arbiter.

If possible, take time to study with the class the different cuts of beef and other meats, that they may know which are most nutritious in proportion to their cost; also how to tell good meats and vegetables when they see them. Help them to find out what makes foods unwholesome at times; why they must always be fresh; why adulterated foods are dangerous. Why some foods are more indigestible than others.

PREPARATION OF FOOD.

Help the class to ascertain why most foods need cooking. How may even the choicest food substances be spoiled by poor cooking? What are the best ways of cooking meats? Why is half-baked bread or heavy cake unwholesome? Why are simple foods to be preferred to rich cake, pickles or candy? What are the best food substances for an every day diet?

If an oil stove or alcohol lamp can be procured give a few illustrative cooking lessons. Boys and girls in the intermediate grammar grades are old enough to prepare some of the simplest foods for the table, and proper teaching now will implant tendencies in the right direction and prevent many an unhappy home.

Choose some dish which can be easiest and most quickly prepared, such as steak or eggs, and show the class how to cook each so that it will be most appetizing and nutritious.

If preferred, each pupil may choose a dish for himself and practice at home under his mother's direction, until he can either bring a sample of finished work for his classmates to inspect, or repeat his cooking lesson before them.

Exercises of this nature may be made so simple and interesting that the pupils will be eager to continue their work in cooking outside of school. Encourage them to do so. Whenever one of them has learned at home how to prepare any article of food for the table, let him describe the process at school, clearly enough for others to know how to do the same. Suggest that they try one thing at a time until each can prepare an entire meal by himself, from selecting and buying the food wisely and economically, to cooking it in the best manner.

SUBSTANCES WHICH ARE NOT FOODS.

In these days, when those who believe in the moderate use of alcoholic beverages are making every effort to fortify their untenable position, it is of all things important that school children be taught to differentiate truth from error. They must avoid the use of these beverages from principle, and be able to state clearly how and why they are harmful. In connection with this lesson, their study of the question is to find out whether drinks containing alcohol can be used as foods; that is, whether they produce the same effect upon the body as do such foods as they have learned are wholesome and necessary.

Put on the board the statement:

Food is a substance whose nature it is, when taken into the body, to nourish and build it up, furnishing heat and strength without injuring any of its parts.

Underneath this definition place the following questions which will connect the topic now

under discussion with their previous lessons on food, and show what points to take up:

Does alcohol build up the body?

Does alcohol repair the waste of the body?

Does alcohol act as fuel to keep the body warm or to produce energy?

Does alcohol injure the body or any of its organs?

What property of alcohol would make its use unsuitable and dangerous even if it answered the description of a food in every other particular?

Refer the class to their physiologies for answers to these questions, but do not let them rest contented with this alone. Ask them to find why alcoholic drinks have been forbidden the British army in Egypt; why men in training for contests of any kind requiring great strength or endurance are not allowed to use intoxicants; why Secretary Long banished liquors from the United States navy. Would these orders be necessary or wise if alcohol contained anything which could build up the body or keep it from wearing out?

"With the dawn it spreads its white and purple wings,
Sturdy morning-glory."

Recent experiments show that alcohol produces heat in the body just as do some other substances. Why then is it not useful in cold countries or in the winter time? This question will puzzle many in the class, but do not help them until each has done his best to answer it. Then, if necessary, explain that while alcohol does set free a certain amount of heat in the body, it also causes a great loss of heat, because more blood is sent to the surface of the body and there lost to the air after alcohol has been taken, just as water evaporates more quickly from a shallow pan than from a deep cup.

But a stronger reason for not using alcohol to warm up the body is that it has the power to injure or destroy the bodily organs. We could use gunpowder to kindle our fires, but while it would give off heat it would also injure or destroy the stove and the people near it, so we use a safer material.

Give the class three minutes to think of different ways in which alcohol hurts the body, or let them spend the time in searching their physiologies for statements bearing on this point, then ask each to state what he has found or thought of. A complete list of the harmful effects of alcohol upon the different parts of the body may then be written on the board.

Compare these effects of alcohol with those of such food substances as the class have studied. Does meat injure the body while it builds it up? Do eggs befog a man's brain? Do bread and butter make a person walk unsteadily? Does a glass of milk or water give an uncontrollable desire for more and more of these liquids?

Copy on slips of paper the statements from eminent authorities quoted at the end of this lesson. Assign one to each pupil with the request that he read it through carefully and prepare himself to explain the points it brings out. Take, for instance, the first quotation. The pupil to whom it has been given reads it through carefully to find what questions it involves, then consults his physiology or other material at hand until he knows:

What is meant by oxidation?

What is oxidized in the human body?

What are the tissues of the body?

How are these tissues wasted?

How does alcohol lessen oxidation in the body?

In what sense, if any, can alcohol be called a food?

How does alcohol resemble strychnia?

What is the unanswerable argument against the use of alcohol as a food?

A similar analysis of all the quotations given will arm the student with powerful weapons with which to repel every temptation to indulge in the so-called harmless glass of beer, or the seductive wine.

AUTHORITATIVE QUOTATIONS.

ALCOHOL IS NOT A FOOD.

Alcohol lessens oxidation, which has led to the claim that it lessens the tissue wastes, and so, while not exactly a food in a positive sense, is, in a negative or indirect way, a sort of food. But this is also true of strychnia and a variety of other poisonous substances. Does this fact constitute strychnia a food? Certainly not. Hence the argument can not be allowed as holding good in relation to alcohol.—[Bulletin American Medical Association.

Alcohol is not in any sense a true food stuff. Containing no nitrogen, it can not contribute to the muscular, the nervous, or the glandular systems. It fails to meet the demand of the body for proteid material, and so supplies no necessity of life. It furnishes no strength. Its apparently stimulant effect is fraudulent, being only the lash that exhausts all the sooner, and utterly fails to renew.—A. F. Blaisdell, M.D.

Alcohol is in no sense a food, and therefore does not give strength.—Prof. T. R. Fraser.

Brimstone can be burnt in the furnace of a steam engine, but it would not be proper fuel, and would destroy the engine. So alcohol is not entitled to be called a food, as, even if burnt, it does harm to the apparatus.—Lauder Brunten, M.D., F.R.S.

Alcohol is neither food nor drink. It satisfies the craving for food, but does not replenish the tissues. Although a liquid, instead of supplying the needs of the system for food, it creates a demand and a necessity for more.—[British Medical Temperance Review.

ALCOHOL DOES NOT BUILD UP THE BODY.

It is conceded by all investigators that neither alcohol nor tobacco supplies any material for the growth or repair of organized structures. Their presence diminishes the activity of both vegetable and animal nutrition and growth, lessens the activity of its leucocytes, and favors cell-degeneration both in the blood and organized structures.—N. S. Davis, M.D., LL.D., F.R.S.

Alcohol is neither a food nor a stimulant, and recent physiological experiments show that it interferes seriously with normal cell-growth.—J. M. Farrington, M.D.

All the alcohol in the world would not contribute a drop of blood, a filament of nerve, a fibrilla of muscle, to the human economy. On the contrary, there is death in the cup, waste of strength, decay of substance, destruction of tissue, degradation of function, material death.—Norman Kerr, M.D., F.L.S.

Alcohol can be of no use as a substance for food; there is nothing in alcohol that can make any vital structure of the body.—Sir B. W. Richardson, M.D., F.R.S.

ALCOHOL INJURES GROWING TISSUE.

According to the highest authorities, alcohol exerts an exceedingly deleterious action on rapidly growing tissues, interfering with their nutrition, and preventing the development of their proper function.—G. Sims Woodhead, M.D.

Even moderate doses of strong drink, when introduced into the living, growing body, retard growth, and make it less perfect; diminish strength and power of endurance, and shorten life.—Dr. Vacher, County Medical Officer of Health for Cheshire, England.

ALCOHOLIC DRINKS ARE POISONOUS.

Beer contains that which is not found in any natural food; it contains a poison called alcohol, and it is this alcohol that makes men so stupid when they drink beer. Wines contain but little nourishment, and a larger quantity of alcohol than beer; and spirits, such as whiskey and brandy, contain no nourishment at all; they are, roughly speaking, half alcohol and half water.—[Temperance Record.

Even were alcohol demonstrated to be a replacer of food, or even to be an actual food under certain conditions, that would not invalidate its description as a poison. It might be a poisonous food, like the poisonous honey which slew so many soldiers in the famous "Retreat of the Ten Thousand."—Norman Kerr, M.D., F.L.S.

Alcohol benumbs the sensibilities. If a man is exhausted, it relieves the feeling of fatigue by obtunding his senses, not by replenishing his wasted energy. Persons who have died from the effects of an overdose of alcohol, present all the indications of narcotic poisoning.—J. H. Kellogg, M.D.

ALCOHOL INDUCES DISEASE.

Alcohol is not a food in any sense of the term. There is no vital organ of the body in which there is not induced, sooner or later, more or less of disorder and disease by alcohol.—Professor J. Miller.

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AUTUMN DAYS.

YELLOW, mellow, ripened days,
Sheltered in a golden coating;
O'er the dreamy, listless haze,
White and dainty cloudlets floating;
Winking at the blushing trees,
And the sombre, furrowed fallow;
Smiling at the airy ease,
Of the southward flying swallow.
Sweet and smiling are thy ways,
Beauteous, golden Autumn days.

—WILL CARLETON.

WORK IN HISTORY.

OUR readers will remember that three years ago, we presented each month an article on the periods of exploration and colonization of America, with the events leading up to the establishment of our national government, while last year we studied the influence exerted by different races upon American civilization. This year, we shall endeavor to discover some of the great political, social and moral principles which have had a formative influence upon our national life and destinies, considering them as far as practicable in their chronological relations. The series begins in this number with a study of the influences that welded the thirteen separate colonies into one strong, united nation.

WORDS INSTEAD OF FACTS.

THE charge that the indorsed text-books on temperance physiology are inaccurate, is mere rant. Certain of the self-indulgent classes whose habits are rebuked by this total abstinence teaching have said in self-defence, "Oh, these books do not teach the truth." To prove their assertions they have given ridiculous statements as to the teachings of the books, statements which the books in question do not contain at all, and then have fired away at these.

The people who hardly knew at first which was right in this contention, can no longer be deceived by such a method, nor by any juggling with definitions intended to prove this same unjust accusation of the critics.

THE PRESENT FOE TO FREEDOM.

THERE are times and events that so recall the past and link it to the present that thoughtful observers are led to see great purposes which began their manifestations in small, and at the time unrecognized events, in the long gone past.

When these purposes move on and on, manifestly growing greater and mightier as the years roll by, the reverent soul standing abashed with face toward the future, asks what is the ultimate fulfilment of all this to be?

The past has been touching the present and foreshadowing the future in this wonderful way in Boston during the autumn days just gone. The descendants of the Puritans and Pilgrims who have kept the faith and mode of worship and church government of their fathers, have been in session in an International Council in this city for eight days, September 20–28.

From England, Ireland, Scotland, Wales, Australia, Canada, Turkey, Hawaii, China and every state in the United States they have come, a noble company of cultured men, some at least of them evidently possessing the lofty devotion known only to souls that "walk with God."

As these men have talked of Scrooby, Leydon, Plymouth in England, the Mayflower and Plymouth Rock, and all that rock has meant to the world, more than three centuries of nation-building history have been recalled to our gaze. We have seen that this great Western continent with the wealth of all zones was kept in virgin solitude until a great race, through culture, chastisement and discipline, was made ready to possess the land and develop a new and nobler type of civilization than the world had before dreamed of.

President Eliot, of Harvard College, at one of these gatherings said, "The spirit and achievements of this people are represented in one word, liberty." The Pilgrims first sought and secured religious liberty, the freedom of church from state. The victorious struggle for political liberty was an inevitable sequence of the possession of liberty of conscience, as was the abolition of human chattel slavery from the Declaration of Independence which proclaimed that "All men are born with an equal right to life, liberty and the pursuit of happiness." The war which drove Spain from the Western hemisphere, with all it has cost of life, treasure and hearts broken for loved ones laid on the altar of human freedom, was inevitable for a people whose mission it is to be the evangel of liberty to the nations of the earth.

We, the children of the Pilgrims, with others of our fellow countrymen, are grateful for every step our nation has been helped to take upward and onward in the past. Thus thankfully facing

the future, we reverently ask what next for liberty? And we behold the worst form of all bondage still entrenched in our land, slavery to Alcohol. Its victims are not, as in the African slavery, an alien, subjugated race, but among them are some of the best beloved of the land, sons and daughters of its homes, and rightful heirs of its heritage of liberty, but bound by appetite with chains more galling, more unbreakable than those which held the late Southern bondman to his owner and master.

At the same time when these descendants of the Puritans and Pilgrims, who had wrought so much for liberty, were gathering in Boston, in Detroit, Michigan, the United States Maltsters Association was holding its annual meeting. Its president, in an opening address, congratulated the members of the association that our flag to-day floats east, west, north, and south, on two hemispheres, and that wherever that flag floats the beverages for which they furnish the material have a legitimate market. It is these beverages which are the enslavers to-day, and which these maltsters would carry to the undeveloped peoples in our new possessions, to whom we desire to teach the art of self-government and good citizenship. Spanish slavery was tender and kind compared with alcoholic slavery, which the Detroit meeting claimed should follow wherever our flag floats. How long will the liberty-loving people of America, descendants of the Puritans and Pilgrims, who love righteousness, allow this slavery to be extended and perpetuated? Until public opinion rises in its might and forbids it. The work of creating that opinion belongs to the school-house.

Every superintendent of schools or school board who makes a definite place in the course of study for an adequate number of lessons to cover each year, in each grade, the subject of physiological temperance for all pupils in all the public schools, and who furnishes good, well-graded, indorsed text-books for the pupils to use in this as in other studies, is making preparation for that public opinion which the teacher helps to create as she faithfully leads her pupils in the study of God's laws of health, especially those which relate to the use of alcoholic drinks and other narcotics.

"The recoverableness of human nature" was one of the keynotes of the great council just closed. Such recoverableness meets no obstacle so powerful as alcohol. How glorious, therefore, is your opportunity, teachers, to be co-workers with the Highest for the redemption of our humanity!

The growing unrest of the English people under ecclesiastic dominion began to take shape with the teachings of John Wyclif, in the early part of the fourteenth century. But it was only after the Bible was made free to all the people a hundred years later by Edward VI., that the great spiritual awakening came, of which was born definite, active Puritanism, with all this has meant for liberty. For a hundred years the people of this country have been restive under the dominion of alcohol. The verdict of history will show that after the full truth regarding alcohol has been given to the whole people through the schools, the chains will be broken which bind so many in this worst of all bondage, that of soul as well as body. The truth shall make them free.

THE INFLUENCE OF PERSONALITY.

The essence of education is the contagion of personality. Do you remember how in Kipling's grand poem, England made a man of Old Pharoah by sending him, not a duke or "big brass general," but Sergeant What-is-Name? And how the sergeant

> "Drilled a black man white, and made a mummy fight?"

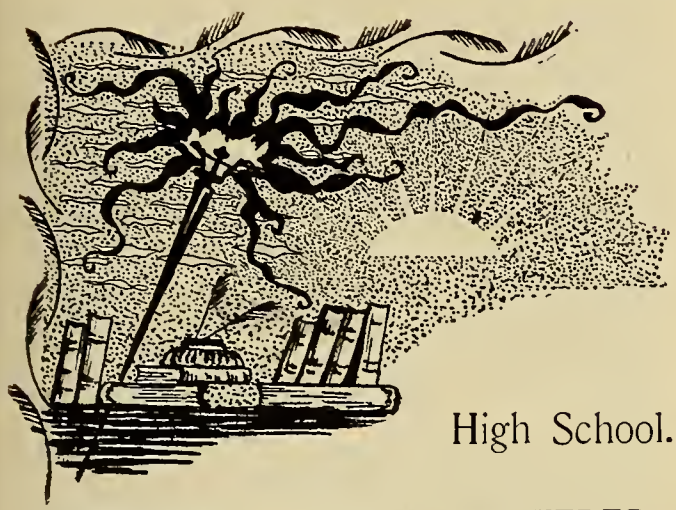
Only when we can do the same are we passed masters in the art of teaching. Until then we would better learn of the sergeant. This is the "everlasting miracle" of education. We have the grandest vocation. We mould the race into conformity with what is deepest, most enduring, and essential in environment. Hence all the powers of the universe are with us. We cast in our efforts with the irresistible tide of events as it sweeps on toward a better age. Let us "be strong and of a very good courage." We can not fail.—PROFESSOR TYLER, of Amherst College.

THE AUTUMN LANE.

A song for the autumn lane,
O'erhung by sumachs and pines,
Where the spider weaves a tremulous skein
In a mist of silvery lines;
And the asters gleam
By the wayside stream,
And peep through the yellowing vines;
And the wild mint's prayer
Floats quaint on the air
In the shade of the muscadines.

A song for the autumn lane,
Where the withered thistles sigh
Like weird old folk that dream in vain
Of love 'neath a summer sky;
While sweet scents roam
Through the thickening gloam—
Flower souls that will not die—
And the crickets trill
A dirge on the hill,
And the dark wind sobs, good-by!

SAMUEL MINTURN PECK.



High School.

PRACTICAL QUESTIONS ANSWERED.

WHETHER from climate, or intermingling of races, or from the strain and stress of life which comes perforce to those who lead in the world's activities, certain it is that American men and women are characterized by delicacy of organism and nervous, highly wrought natures. Nor is this a mark of weakness. "We are woven of finer fibre," says a well-known author, "which, though apparently frail, yet outlasts the coarser, as rich and costly garments oftentimes wear better than those of rougher workmanship."

In this very sensitiveness, however, lies a peculiar danger. The resistless energy which has accomplished so much, pants to achieve yet more and more, and when physical strength flags so-called stimulants are resorted to. We need education on this point. Few would take a glass of wine or brandy to relieve physical exhaustion were it not for their belief in the stimulating effects of these beverages. Convince them, on the other hand, that what seems to give strength is but the beginning of a greater weakness, that alcoholic drinks benumb and paralyze and deceive their devotees instead of inciting to greater efforts, and the old delusion will die out of itself.

IS ALCOHOL A TRUE STIMULANT OR IS IT A NARCOTIC?

The question deals directly with this problem, and its solution should go far towards securing total abstinence for coming generations. An elixir of life has been sought since the days when the world was young, but man has never found it in any alcoholic beverage, nor can he from the nature of the case. The young student of physiology must know the underlying reasons for this, and the present lesson, with its comprehensive quotations from the best authorities, is intended to furnish at least a part of the necessary material, together with suggestions for its use.

In the first place, high school students should consider some of the reasons why stimulants are so much craved by a large class of people who are not dissolute, and who have not naturally bad tendencies. Why is it that the workman stops for beer on his way home? Why does the public speaker indulge in wine after an exhausting address? Why do overworked women and delicate girls resort so often to some widely advertised patent medicine containing, did they but know it, a large percentage of alcohol? Is there anything in the nature of this substance so eagerly sought which can give nourishment or strength, or which can enable mankind to violate health laws and not pay the penalty?

In the second place, are the apparent effects of small doses of intoxicants the same as their real effects? Every one knows that alcoholic drinks seem to give strength to the weary, fire and energy to the listless, food to the hungry; that after indulging in them man ceases to feel the cold, difficult tasks appear easy, and his strength is as that of ten men. Is he right or wrong? Has alcohol the power to feed and warm and energize, or does it promise what it can not perform?

In the third place, how are the apparently contradictory effects of alcohol upon the human organism to be explained and reconciled? Why do small doses seem to stimulate, while larger amounts paralyze? How are the nerves which control the heart affected in each case? What are the proofs which class alcohol as a narcotic? The young man or woman, who investigates this subject with the thoroughness which its importance demands, and who answers these questions fully and honestly for himself, after consulting every authority within his reach, will be in little danger of mistaking poisonous beverages for foods, or of wrecking his life's craft amid the shoals and breakers of moderate drinking.

AUTHORITATIVE QUOTATIONS.

The physiological action of alcohol will be tolerably understood, when it is said to be an inebriant narcotic. But it must be observed that when given in small quantities its stimulant effect may be the chief action manifested, its secondary sedative effect may hardly take place, and the production of inebriation or drunkenness may be altogether avoided. So much is this the case that alcohol is by some regarded as a stimulant. But the same thing is remarked of opium, though in a less degree. And the effects of large doses of alcohol are sufficiently obvious to indicate its place among narcotics. For the state of inebriation may even pass into coma and death.—F. W. HEADLAND, M.D., F.R.S.

In addition to an irritant poison alcohol is a narcotic poison. What is a narcotic? It is something which dulls the senses.—NORMAN KERR, M.D., F.L.S.

Alcohol has clearly no right to be called a stimulant. It is a narcotic from first to last, and the symptoms of stimulation are only the result of a peculiarly balanced condition of many functions between accelerating and checking nerves; the narcotising of a checking nerve producing for the time being the same visible effect as the stimulation of an accelerating nerve.—J. J. RIDGE, M.D.

In general, let it be understood that all the workings of alcohol in the system, which usually are considered as excitement or stimulation, are only the indications of paralysis.—GUSTAV BUNGE, M.D.

One after another of the so-called stimulating effects of alcohol upon the organism must be abandoned; these are but the indirect results of local causes, and the alcohol in itself possesses only a narcotic action which is quickly evident and alone remains manifest and indisputable.—E. DESTRÉE, M.D.

During the past few years a number of observers have been investigating this matter by measuring the exact effect of small doses of alcohol upon the special senses, and they have all come to the conclusion that from the very first alcohol acts upon the body as a narcotic, and not as a stimulant.—J. J. RICHTIE, M.D.

Alcohol is not a stimulant; it lashes the nervous system into great activity, but causes a greater depression as a result.—J. M. FARRINGTON, M.D.

From a purely physiological standpoint, the appearance of the signs of excitation produced by alcohol may be taken as the beginning of paralysis.—R. DEMME, M.D.

It is the diminution of nerve sensibility that renders the individual first, light, airy and hilarious, giving the popular idea of excitement or stimulation; second, dull, hesitating, or incoherent in thought or speech, and unsteady or swaggering in gait, a stage popularly recognized as incipient intoxication; and third, brings on entire unconsciousness and muscular paralysis, constituting dead-drunkenness, or complete anæsthesia. These successive stages are developed in direct ratio to the quantity taken.—N. S. DAVIS, M.D., LL.D., F.R.S.

Alcohol quickens the heart's action, as well as apparently increases its power, by paralyzing its restraining or inhibitory nerve mechanism. But no sooner is the quantity administered sufficiently increased than all its at first apparently stimulating effects vanish. From its now possessing adequate power to paralyze the accelerating, as well as the retarding cardiac nerve mechanism, the heart's action becomes diminished, until at length, if a sufficiency be given, the cardiac movements are totally arrested, and death closes the scene.—GEORGE HARLEY, M.D., F.R S.

Alcohol paralyzes the intellect, the sensations, and the will; but shows the contrary delusively to the dimmed consciousness. It paralyzes the perception of cold as well as that of warmth; therefore, it seems to raise our temperature in cold weather and to reduce it in warm weather. Really it withdraws from the body heat and force, and paralyzes its activities, the basis of its life.—AUGUST FOREL, M.D.

People appeal to their feelings, and as they seem more excited, brisker and livelier after a dose of alcohol, they jump to the conclusion that the alcohol has had a direct stimulating effect upon them. Exact measurements have proved that this is an illusion, and that from the first measurable effect of alcohol to the last there is a gradually increasing paralysis of the nervous system.—J. J. RIDGE, M.D.

The so-called stimulant action of alcohol is only apparent or secondary, and its real and primary action is depressant or narcotic. It produces progressive paralysis of the centre of the nervous system, both sensory and motor. It is absurd to call that which produces drowsiness and sleep a stimulant.—[Medical Pioneer.

The invariable effect of alcohol when taken into the stomach is that of paralysis of the nerves of sensation; the amount of this paralysis depends upon the quantity of the poison administered. This explains why it is that persons feel better after having partaken of the liquid; they have less feeling, and what they do have is less reliable.—CHARLES H. SHEPARD, M.D.

In a paper presented before the American Medical Temperance Association, I gave the results of psychologic tests made upon a number of persons before and after taking alcohol, by which I showed that the reaction for the tactile and the temperature sense were both diminished more than 100 per cent., while the muscular strength was diminished more than 30 per cent. Alcohol benumbs nerve structures of every sort, and does not in the slightest degree increase either mental or nerve activity. Nothing could be more absurd than the common prescription of alcohol, or of such mixtures as Vin Mariana, when tonic effects are desired. These drugs are simply nerve foolers. They lessen nerve sensibility, and thereby diminish the sense of fatigue, exhaustion, weakness, or whatever discomfort may exist.—J. H. KELLOGG, M.D.

You see a man come in cold; he takes a glass of liquor, and in a few minutes thinks he is warm. He is simply paralyzed, so that he is

insensible to the effects of cold. He goes out under the influence of alcohol, feels that he is perfectly warm, sits down, and freezes stiff. A man under the influence of alcohol thinks he is powerful enough to whip two men, but at the same time it requires two men to hold him up. Call that stimulation? He is simply paralyzed. —W. M. RICHARDS, M.D.

The cause of the heart's quicker action (after alcohol has been taken) is not stimulation. In illness, no one would try to stimulate the heart by repeated frights; it would beat quicker, but fail faster. The action of alcohol is similar; it does not stimulate, but reduces control; and experiments have shown that each special sense is blunted even by small doses.—DR. MCDOWELL, of Dublin.

The truth is that those who take alcohol are not able to give an unbiased opinion about its action, as one of its most marked effects is that it is a narcotic to the mental powers. Suppose spectacles were invented which made everything at first look of a rosy color, but gradually change until everything seemed of a dismal gray; would you ask any one wearing these glasses to describe the colors of the surrounding landscape? Certainly not. He might paint them too vividly; he might paint them too dismally; but he would never paint them truthfully. Just so, I am not prepared to accept the praise or blame of alcohol by those who use it; often those who use it are prepared to blame anything except themselves; and it is from them that we hear so much of the evils of fusel-oil and adulterated drinks, and of the difficulty of getting good wholesome beer or spirits. We quite agree with them as to the latter difficulty, but we attribute it not to the presence of adulterants, but to the presence of alcohol.—DR. CASGRAN, of Dublin.

"What visionary tints the year puts on,
When falling leaves falter through motionless air,
And Autumn smiles and shakes abroad her misty, tremulous hair."

The lands are lit
With all the autumn blaze of goldenrod
And everywhere the purple asters nod
And bend and wave and flit.

—HELEN HUNT JACKSON.

DOES ALCOHOL WARM UP?

A patient was urging with his doctor the necessity of his taking a stimulant. He argued that he was weak, and needed it. Said he:

"But, doctor, I must have some kind of a stimulant. I am cold and it warms me."

"Precisely," came the doctor's crusty answer. "See here, this stick is cold," taking up a stick of wood from the box beside the hearth and tossing it into the fire, "now it is warm; but is the stick benefited?"

The sick man watched the wood first send out little puffs of smoke, and then burst into flame, and replied: "Of course not; it's burning itself!"

"And so are you when you warm yourself with alcohol; you are literally burning up the delicate tissues of your stomach and brain."

Oh, yes; alcohol will warm you up, but who finds the fuel? When you take food, that is fuel, and as it burns out you keep warm. But when you take alcohol to warm you, you're like a man who sets his house on fire and warms his fingers by it as it burns.—[Selected.

Small Bostonian (struggling with her arithmetic) — "O, dear——"

Papa — "What is it, my child?"

Small Bostonian—"I wish I were an Australian rabbit."

Papa—"An Australian rabbit? Why, my child?"

Small Bostonian—"Because they multiply so rapidly."—[Exchange.

Maurice and Johnnie have been rude to their mamma. Mamma has complained to papa, who is heard coming up stairs.

Johnnie—"I say, Maurice, here comes papa, I shall pretend to be asleep."

Maurice—"I shan't—I shall get up and put something on."—[London Figaro.

"Every experience in life has something to do in shaping character, just as every rain has something to do in forming the hills and saying where the rivers shall run."

THE BUILDING OF THE NATION.

I. Laying the Foundations.

THE school children of to-day, who stand at the dividing line of the nineteenth and twentieth centuries, sing with hearty patriotism :

"My country, 'tis of thee,
Sweet land of liberty."

The children who saw the eighteenth century merge into the nineteenth had no conception of our land as a nation.

The Revolution with its years of strife had merely united the colonies against a common foe, but political unity was to be the work of the future. The colonies had learned much about self-government before the war. Although they had royal governors, they had chosen for themselves the men who were to make their laws, while they had often resented the misused authority of the governors. So when they declared their independence, the states agreed to let Congress have some power, but not enough to give it the least chance to be tyrannical. Hence they reserved the two very important rights of taxation and of raising an army, with the result that Congress could call for troops and for money, which the states furnished or not as they chose. During the war, therefore, the generals very often lacked both men and the necessary funds to support the soldiers already in the field. When peace came, matters were not improved, and Congress had the difficult task of trying to place the states on a respectable footing in the eyes of the world, without the means of inforcing a single necessary demand. It was veritably a case of having to "make bricks without straw."

For six years after the close of the war, matters went from bad to worse. The states quarreled among themselves ; they had no common currency, but a miscellaneous collection of pennies, pistareens, picayunes, doubloons, guineas, ducats and sous, inherited from the different nations founding the colonies. The national debt hung like a mill-stone about the neck of the young government. Evidently something had to be done if liberty so dearly bought was to be preserved.

Washington and Franklin with many other intelligent men of the colonies had never been satisfied with the character or the results of the Confederation, and had more or less definite ideas as to what was needed to bring the states into a more harmonious and effective union. But it is said that a leader is raised for every crisis, and dark as was the outlook, one man especially had caught a bright vision of the great nation that was to be, and had grasped the meaning of its destiny. Young and daringly courageous, a man of keen perceptions and brilliant powers, Alexander Hamilton saw, as did perhaps few of his time, the real solution of the problem. At only thirteen years of age, he had successfully managed a large business alone in the frequent absences of his employer. Through the Revolution, he had fought bravely and wisely with lip and pen and sword, while retirement to private life had merely transferred his interest from war to the means of making wise use of peace ; and so, while the Confederation was dragging out its feeble existence, he was laboring quietly but persistently to rouse his fellow citizens to a sense of their national possibilities.

The disorder of the country at last made a change imperative, and in 1787, a convention of delegates from nine states met in Philadelphia to consider methods of reform. After four months had passed in secret session, the members presented to their respective states for consideration, a new constitution, a document that had cost much argument, some hard feelings, and no small surrender of state rights. One thing first of all had been necessary,—some provision for giving the government the right to compel obedience to its necessary demands. "This constitution, therefore, created a national House of Representatives which could tax the people ; a Senate, which represented the several states ; a national executive with an elective president at its head ; and a national judiciary with officers to maintain and inforce national decrees."

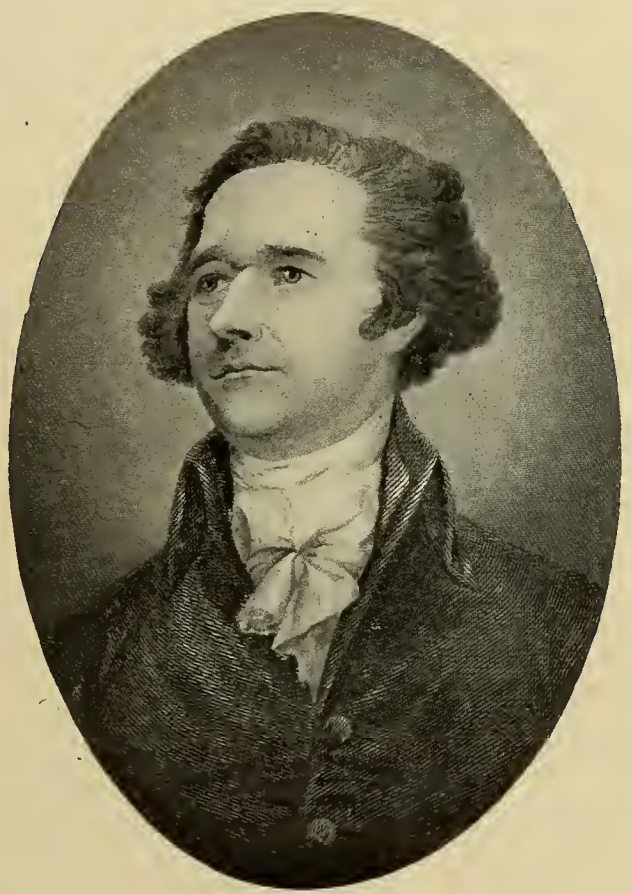
The states were still allowed to control their own affairs so long as such control did not interfere with the interests of the whole country. Two wheels of a watch are set in motion by one spring, and though both are complete and perfect in themselves, in order to do their proper work each is dependent upon the other. So the new constitution provided for two kinds of government in the country, state and national, set in motion by the same spring—the vote of the people—each complete and powerful in its own sphere, but each dependent upon the other. The question of ratification soon gave birth to the first genuine political parties, the Federalist, which supported the principles of the constitution, and the Anti-Federalist which, as its name implies, was opposed to the changes suggested. Vigorous work was done everywhere in behalf of the Constitution by the leading Federalists, among them Franklin, Madison, Jay and Morris, but perhaps no one had the wide influence of Hamilton. Some of the arguments against this new plan of government seem very absurd as we read them to-day. The good people of Massachusetts thought they might be willing to trust Congress with the sole government of a territory one mile square, but that an area ten miles square which had been proposed for the national capitol, offered altogether too great temptation for seizure of abso-

lute power. Accustomed also to exercising a watchful care over the doings of their local "selectmen," they thought it rather doubtful if they could trust representatives to act on their own authority so far from home. But underneath all petty excuses, lay their great reluctance to surrender ever so little a portion of their "state rights." They hardly realized that they had already done this in giving up even the limited powers of the Continental Congress under the Confederation, and later in surrendering to this same body the western territory held by the various states.

But in spite of all opposition, the Constitution was finally adopted by a sufficient number of states to carry it into effect, and a definite, though it must be confessed somewhat hesitating step, had been taken toward nationalization. However the Constitution was still but a document. It had yet to become a living force.

The election of Washington to the presidency brought Hamilton into the cabinet as secretary of the treasury, and his keen intelligence soon found ample employment in treating the questions of every kind that came to him from all branches of the government. But his best known work was done in his own department. Congress had hardly assembled before he laid before it reports suggesting a new currency on the decimal plan, the establishment of mints and of a national bank, and a just system of taxation. He also wished the government to make internal improvements, such as road and canal building, for the sake of giving the people better means of communication, and thus of stimulating trade. He recommended too that bounties should be paid, and a tariff levied on imports for the sake of encouraging home manufactures.

These suggestions when brought before Congress led to the reforming of parties on new lines. The Federalists promptly rallied to the support of the administration and its measures, while the Anti-Federalists, seeing that the tendency would be to strengthen the national government at the expense of the states, stood out for a strict adherence to the powers expressly given Congress by the Constitution. Among other things, they claimed that the Constitution gave the national government no right to assume the old debts of the states as Hamilton had recommended, that the scheme of a national bank in which the moneyed classes of all states were to be interested would surely break down state lines, and that the whole thing was only a ruse anyway of "that aristocratic Hamilton" to establish a kind of monarchy under the outward form of a republic. But Hamilton had his defence ready in that clause of the Constitution which gives Congress the right "to make all laws which shall be necessary and proper for carrying into execution . . . the powers vested by this Constitution in the Government of the United States."



Alexander Hamilton.

In spite of opposition, the plans of Secretary Hamilton were adopted with almost immediately favorable results. Trade increased in all parts of the country; prosperity followed; public credit increased at home and abroad; while the government, armed with the powers expressed and implied of the Constitution, was able to command universal respect, until almost unconsciously the people began to consider themselves as belonging to a true nation.

Hardly were the internal relations of the country somewhat adjusted, when it became necessary for the government to decide what its relation should be toward England and France then engaged in war. Washington, and Hamilton as chief adviser, felt that the nation should adopt a course of strict neutrality regardless of past sentiments of affection or resentment toward the two countries. This policy followed through the succeeding turbulent years, even into Adams' administration when both Washington and Hamilton were out of office, proved to be the country's greatest safeguard, keeping it, for a time at least, out of the international quarrel.

On the whole, the Federalists had been extremely fortunate in following out a line of action whose results were far-reaching and beneficial. But unfortunately, they had not achieved this success without causing some division among

themselves. Personal jealousy, unreasonable in its beginning, had early caused a break between President Adams and Hamilton, while the foreign policy of the Federalists, especially in passing the unreasonable "Alien and Sedition Acts" which seemed to strike at the very foundations of a free government, liberty of speech and press, had been guided by a faction anxious for war. A reaction naturally followed. At the same time began to be felt the result of some skilful work on the part of the Anti-Federalists in secretly undermining the influence of the Federalists, by encouraging the idea that "Federalism" would eventually lead to restrictions of true democratic liberty.

As a result of these combined forces, the Federalists were defeated in the election of 1800, Thomas Jefferson being chosen president, and never again came into national power under their old name, the organization passing out of existence within fifteen or twenty years, although its principles reappeared later in the platform of the National Republican Party.

The question of the supremacy of national or of state rights long remained a bone of political contention, and its decision was bought only at the fearful cost of four years of civil war.

But the wise application of the doctrine of national supremacy, united with a free use of the powers granted by the Constitution, made the United States a nation among nations, and pointed the way to great future expansion and usefulness. Hence, whatever may have been the weaknesses and errors of the policy of the Federalists, it must be remembered that we are indebted to them as a party, and in no small degree to Hamilton, for laying the foundations of the united nation of which we are all so proud to-day.

Senator Lodge says of this period and its most brilliant leader: "Hamilton is one of the statesmen of creative minds who represent great ideas. It is for this reason that he left the powerful mark of his personal influence upon our history. . . . One great idea of which he was the embodiment, was that of nationality. No other man of that period, except Washington, was fully imbued with the national spirit. . . . He alone perceived the destiny which was in store for the republic. It is given to but few men to impress their individuality upon the history of a great nation. . . . So long as the people of the United States form one nation, the name of Alexander Hamilton will be held in high and lasting honor."

A MODEST YOUTH.

"Who is the smartest boy in your class, Bobby?" asked his uncle.

"I'd like to tell you," answered Bobby, modestly; "only papa says I must not boast."—[Harper's Bazar.

VICTORY.

"He who believing, strongly lays his hand
Unto the work that waits for him to do—
Though men should cavil, measures prove untrue,
Friends write their trusted promises on sand,
And failure mock him with its threatening brand,
Still, in the end, he, fearless, shall pursue,
Till crack of doom will find a power which few
Or none with cause less righteous may command.
For conquest is not built on the defeat
Of any man whose aim is human good;
Who fights for justice hath already won,
Before no show of loss shall he retreat;
However crossed, maligned, misunderstood,
He knows but triumph in the work well done."

THE DRINK HABIT HANDICAP.

The United States Commissioner of Labor made public the results of his examination into the question as to what extent the fact of being a drinking man bars a man from obtaining employment.

Circulars of inquiry were sent to 7,000 employing concerns, all of which are representative in their lines of business. There were 6,976 replies received. Of these, 5,363 state that they take the drink habit into consideration in employing new men. The reason given by most is that it is simply a business precaution. The employer is liable for damages done by accident in his establishment, and it is but prudent to employ only men with clear heads.

The reason is a good one, and should be pondered by every workingman. To have a reputation as a sober man is distinctly in a man's favor in obtaining work, and in these days of intense competition every man who desires to prosper will see the necessity, as a bit of business prudence, for avoiding the drink habit.—[Banner of Gold.

"The buds may blow and the fruit may grow,
And the autumn leaves drop crisp and sere;
But whether the sun, or the rain, or the snow,
There is ever a song somewhere, my dear."

The mistaken idea that small quantities of alcohol are harmless, permits men to drink beer and stronger drink without question, yet a scientific study and measurement of the senses and functional activity of the body shows that twenty drops of alcohol interferes with the normal activity, and is manifest in the diminution of the sense acuteness and brain activity. —T. D. Crothers, M.D.

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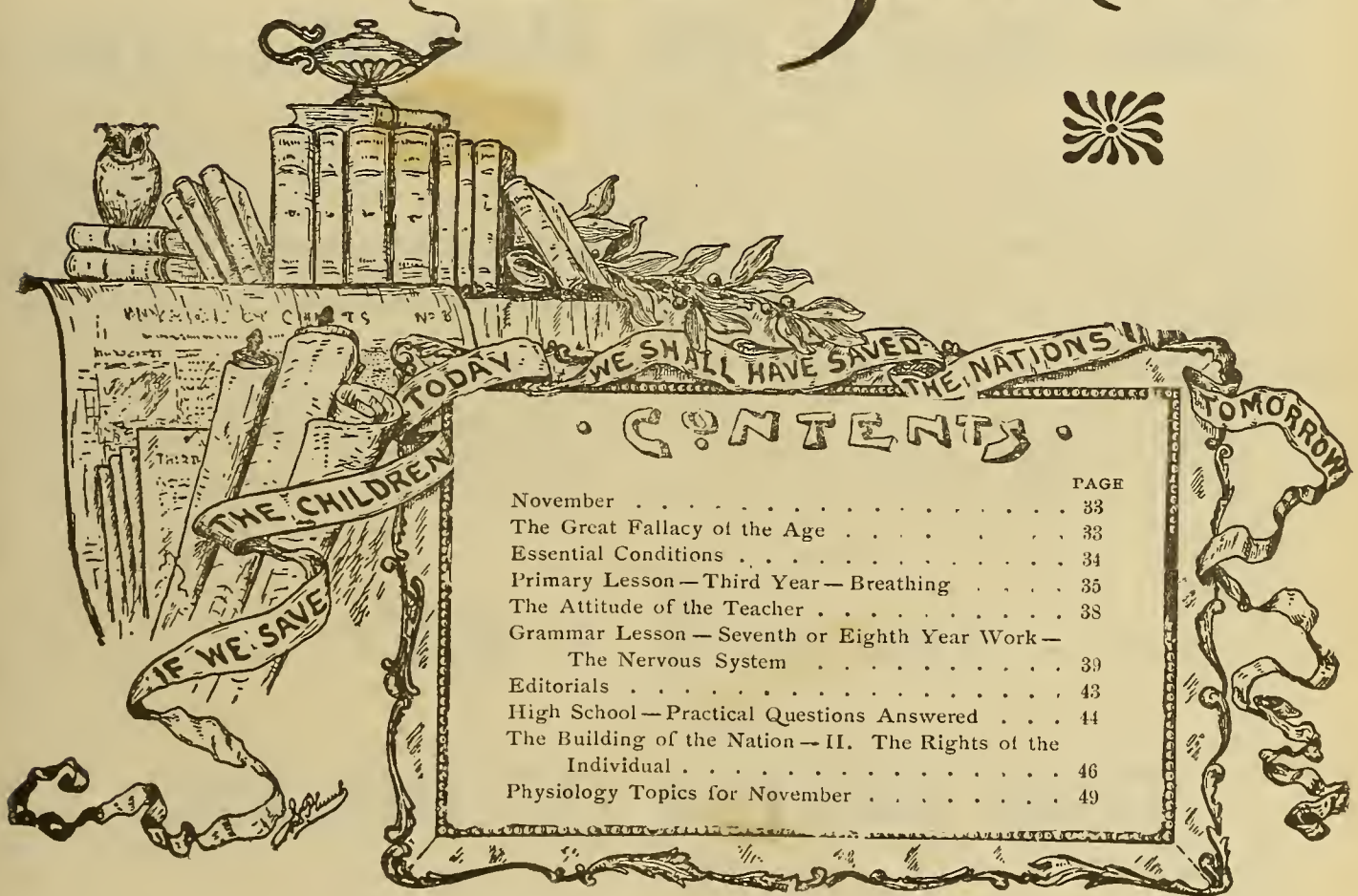

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NOVEMBER, 1899.

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School Physiology Journal

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NOVEMBER.

Still November, like a Quaker
In her garb of silver gray,
Glides along the silent reaches,
Shadow-like as dawn of day.
Gay chrysanthemums she carries
From the garden-lands abloom,
And the bracing air is laden
With the spice of their perfume.

She is full of tender fancies
As she wanders here and there—
Standing underneath the branches
That are shadowy and bare,
And we feel a silent something
In our heart of hearts increase,
And I think the definition
Of its meaning might be—peace.

—Ida S. Taylor.

THE GREAT FALLACY OF THE AGE.

GREAT despotisms in their beginnings rest on the misconception or ignorance of the people. This is markedly true of alcoholic slavery which has come down to us from the misapprehension of the past with consequences that darken the Christian civilization of the closing years of the greatest century the world has ever seen.

It is the object of the study of physiological temperance in the public schools to dispel this fallacy which is a first cause of the blight of intemperance, and to do it by teaching all pupils the truth revealed by science and experience as to the evil nature and effects of alcoholic drinks and other narcotics.

All history is witness to the power of truth to influence opinion and thereby change human action, especially when it is implanted in the plastic period of childhood. In this lies the hope of the future.

Seventeen years ago, in 1882, the first state law was enacted making the nature and effects of alcoholic drinks and other narcotics, as a part of physiology and hygiene, a mandatory study in the public schools. During these seventeen years, through the action of the National Congress and the legislatures of forty-two states, this branch has been made a compulsory study for all pupils in all the public schools of almost the entire country. Georgia, Virginia and Utah alone have yet to make legal provision for the temperance education of their children. Arkansas has enacted such a law during the past year. Thus the way is now open for this important truth to go to almost the entire public school population of this country. Our children have a right to the truth, and they should be taught the whole truth and nothing but the truth on this profoundly vital topic.

Comprehensive and exhaustive efforts have been constantly exerted to secure and hold a well graded school literature on this subject, a literature without bias and sustained by the testimony of modern science. This has been accomplished at an expense of thousands of dollars and a corresponding outlay of time and care, one or more persons being constantly employed in expert research, scanning medical, physiological and scientific journals, translating and collecting therefrom all matter pertaining to the nature and effects of alcohol and other narcotics, and keeping a classified collection and index of this matter ready for instant reference. The latest standard works on physiological chemistry, therapeutics, physiology and hygiene, as well as periodicals and pamphlets bearing on related subjects, are constantly being added to the department library which is probably the most complete of its kind in existence. Thus we have been able to meet at every point fallacious charges of inaccuracy, and to show the errors of so-called scientific deductions calculated to mislead those who have not made special study of the subject.

When the first temperance education laws went into force there were no such school text-books in the world as these laws called for. To-day nearly every school book publishing house in the land is issuing such books, and the temperance matter of nearly all of them bears the approval of this department. Every attempt to prove their teachings inaccurate has thus far signally failed, although from the first, vague, indefinite rumors have been afloat that these text-books are inaccurate.

This was to be expected. Truth that rebukes popular error always meets denial. Nevertheless, truth marches right on; nothing can stop it when the time comes for its promulgation, for He who said, "I am the truth" is omnipotent.

As these books began to be quite generally studied, certain of the self-indulgent classes whose habits were rebuked by the information brought home to them by their children, in self-defence brought forward the charge of inaccuracy, but although this department repeatedly asked for definite statements none have been presented until recently.

This year specific charges have been made, with an attempt to substantiate them by means

of Professor Atwater's widely advertised man shut up from four to twelve days in an air-tight glass box and there fed three glasses of whiskey per day.

As a deduction from these experiments certain critics assert that it is an error to teach, as do the indorsed text-books, that alcohol is a poison. Why should they not so teach? For the past twenty years great medical and chemical authorities, physicians, lexicographers and toxicologists have taught without reservation that alcohol is a poison. Nothing reported in Professor Atwater's experiments proved all these experts to be wrong. "Oh, well," these critics say, "you should teach that alcohol is sometimes a poison." When will it not be a poison? we ask; and they answer, "When it is used in quantities and ways that cause no injurious effects." The worst poisons known might be used in such infinitesimal doses as to cause no injurious effects, and yet that possibility has never taken them from the poison list. It is quibbling to claim more for alcohol. What is the quantity of alcohol that will in every case and at every time cause no injurious effects? No one can tell. If in every case and at every time the use of alcohol is an experiment, with always the possibility of disaster, such evasive teaching on this point as these critics desire would be both unscientific and immoral.

The second claim is that children should be taught that alcohol is sometimes a food. We again ask, "When will it cease to be a poison and become a food?" and the answer is, "The effect of a given amount of alcohol differs with individual heredity, environment and present physical conditions." Thus again, taking the critics' ground, all is uncertain, nothing is definite. Their only reason for calling alcohol a food is their claim that it is oxidized in the body, liberating heat and energy. The same can be said of some other most deadly poisons. These are oxidized in the body, liberating heat and energy, but poisoning at the same time, and this is what alcohol does.

The real question at issue in all this debate about the accuracy or inaccuracy of these text-books is one which underlies the whole temperance reform. Does truth, as revealed by modern investigation and by experience, teach total abstinence or moderate drinking? We reply unhesitatingly that no investigation has disproved the multiplied testimony of scientific men and of bitter experience which establishes total abstinence as the only rule for certain safety. No juggling with definitions can choke this truth, no specious deductions can overthrow it. We must study its teachings, stand by it and keep step with the march of Omnipotence, which has made the truth in regard to alcohol the lawful heritage of the childhood of this great nation. MARY H. HUNT.

THE LAST OF AUTUMN.

The wind-curled leaves are falling down,
Downward to the earth in showers,
Hiding in the grass and flowers—
Rustling leaves of green and brown.

The wind, uncertain in its play,
Tender, soft, then quickly rushing
Onward, all the leaves is brushing,
Filling hollows by the way.

A stray winded seed floats through the air
Gently moving, light and airy,
Some belated thistle fairy,
Wind-dried, sails by without a care.

—Child Garden.

ESSENTIAL CONDITIONS.

THREE conditions are essential to the right enforcement of our temperance education laws.

The first and most important condition is that a definite place be made in the course of study for at least three lessons per week in temperance physiology, for ten weeks of each school year. This does not, of course, mean that each lesson in physiology must necessarily be a temperance lesson, but refers to the entire subject, anatomy, physiology and hygiene, as well as temperance. Where such a definite place is made in the curriculum there is time for the profitable study of this branch without burden to pupil or teacher, and the objection of lack of time ceases to be heard.

The second and third conditions are well graded text-books in the hands of pupils who use text-books for other studies, with oral instruction for the primary pupils, and the same tests for promotion as in other subjects.

Wherever the best enforcement of these laws is lacking, the cause lies ordinarily with the school board or school superintendent that has failed to make adequate provision for the pursuit of this branch. Such failure may be due to the mistaken idea of these officials that the study calls merely for an occasional exhortation by the teacher, but this will not alter the result.

The great army of the future which is to overthrow this dreadful slavery of alcohol is already inlisted; its soldiers are enrolled in our public schools of to-day, hence they need now to be equipped with truth that they may be able to meet the demands of coming citizenship and of personal temptation. The men who failed properly to equip and furnish our soldiers inlisted for the Spanish war are held by their countrymen responsible for many a lost life. History will pronounce its own verdict on the school boards, committees and other officials whose neglect has deprived any public school pupil of his full share of instruction against his greatest peril and the most dangerous enemy of the republic.

Primary Lesson.

THIRD YEAR.

BREATHING.

ONE reads with pride and enthusiasm of New York's clean streets under the vigorous efforts of the late Colonel Waring, and of General Wood's victorious fight against contagious disease in Santiago, but responsibility is not confined to men and places under the public eye. Equally grave problems in sanitary science confront the average teacher in her little domain, and her work, though upon a much smaller scale, is equally worth doing well. Here also, contagion must be warded off by periodic examination of all pupils. Defects of sight and hearing need prompt attention. The schoolroom must be well lighted, well aired, and kept scrupulously clean. Given these best of surroundings, the children must be taught to utilize them. "Every child disciplined to-day in the accepted respiratory school," says a distinguished physician, "is capable of taking in twice as many cubic inches of air as his parents." Additional lung power means better health and greater working ability; it is therefore highly important that the teacher make a careful study of the whole subject of respiration, that she may know how to train her pupils to take advantage of the possibilities within their reach. The present lesson suggests one method of studying this topic with a class of advanced primary pupils.

WHAT WE BREATHE.

Call the attention of the children to the air itself. Ask how we know there is such a thing. Where is it? If a strong wind is blowing have them listen to its different sounds. If not, let them go to the windows and watch the trees in sight. What moves the leaves and branches? What causes clouds of dust in the street? What do we feel against our cheeks when we ride in an open car, or when we run fast? Can we see the air? Can we taste or smell it? How do we know it is all about us?

Lead the children to see that there are great differences in air. Ask how many have ever waked up in the morning with a headache. How did the air in the room seem? Why do we soon feel dull and sleepy in a tightly closed room? Why do lamps often burn more dimly late in the evening than when first lighted?

A familiar experiment will show the children that air is not a single substance, as they probably have always thought. Light a bit of candle and invert over it a small glass jar. The flame will grow dim and soon go out. Lift the jar and place at once, mouth downward, in a dish of water. See if anyone can tell why the candle went out; why the water does not entirely fill the glass jar. Is there a part of the air above the water? What has become of the other part? Is air then made up of one substance or more than one?

If right answers can not be obtained without guessing, tell the children that the air is composed of different substances mixed together, just as we might put water and other colorless liquids into the same jar, and no one could tell by looking at them how many there were. One part of the air keeps the candle burning, and our lamps and fires from going out. We call this part oxygen. We need it for something else even more, can anyone tell what it is? Shut your mouths tightly and hold your noses for a moment. Now you will know.

We need the oxygen of the air to breathe.

The oxygen of the air makes the fire burn and keeps us alive.

Write these statements on the board and tell the class that no one could live without oxygen. Every animal needs it as well as people, and it is as necessary to us as it is to keep the candle burning. When we speak of breathing fresh, pure air, we mean air which has a good deal of oxygen in it.

Call some child to the platform and ask him to stand perfectly still, breathing quietly and naturally for a few minutes, while the class watch. Ask all to rise in their places and do the same. What do we do when we breathe? Where does the air go to when we breathe in?

Have the children place their hands on their chests, then draw a long deep breath, and slowly let it out again. Why do the chest and sides swell out when we breathe in and grow smaller when we breathe out?

Ask your pupils to watch a cow breathe, and find whether her chest grows larger or smaller as their own do. What other animals breathe in this way? Why is not the oxygen in the air used up if people and animals need so much and are all the time using it?

Let the children think about the question for a little, even though they can not answer it. Then tell them that every tree and plant and flower gives off oxygen for us to use. Plants breathe too, but they need another part of the air for themselves, the part which we breathe out. This is one reason why we must have so

many plants in the world — to keep the air fresh and pure for us to breathe, by supplying it with plenty of oxygen.

WHY WE BREATHE.

We have already found one reason why we need to breathe — because every part of the body needs oxygen and could not live without it. Who knows how the oxygen of the air gets to every part of the body?

This question will be answered readily if the lesson on breathing has been preceded by others on the blood and its work. If not, some explanation will be needed by the teacher. Ask the children how city water is carried from street to street and house to house. Then tell them of the tiny pipes in the body which carry food and oxygen to every part.

Suppose we go into a room which feels chilly. There is plenty of wood or coal in the stove, but it is all shut up tight and the fire hardly burns at all. What is the first thing we do?

"Young inheritor of a world."

"Who would not be a boy?"

Let the children tell in their own words how they would quicken the fire, and why opening the drafts makes it burn better.

When this is clear, ask how we can warm up ourselves on a cold day. Of course we can put on more clothing, but so also could we wrap up the stove. Who knows a better way? We can make the blood move faster by taking long, deep breaths and giving the body more oxygen. Why do we feel so warm after running or walking fast? Do we breathe faster or slower when we run? Do we take in more or less oxygen.

Who can think of another reason why we need to breathe?

What does the janitor do when we leave the schoolroom at night? Why does he open the windows and sweep and dust so thoroughly. Should we enjoy staying in a room that was never cleaned or put in order? The janitor of a schoolhouse sweeps out first one room then another; puts all the rubbish into a pile and carries it away together. There is a great deal of waste matter in our bodies too, and this must be got rid of as much as the waste in our houses. Let us think of one of the ways in which this is done.

Tell the class, if they have not had lessons on the subject, of the purifying work of the blood. Compare it with that of the janitor of a large building, and explain how the blood goes to part after part of the body picking up tiny particles which are of no further use and carrying them to the lungs to be thrown off.

Ask why we need to breathe out as well as to breathe in. Talk this over until all the children understand that every time we breathe out we get rid of some worn-out particles and give these inner rooms of the body a little airing.

In review, get from the class statements of the different reasons why we need to breathe, and write these all together on the board:

We need to breathe

To get oxygen enough to keep us alive.

To help keep us warm.

To get rid of the worn-out parts of our bodies.

HOW WE BREATHE.

It will be an interesting exercise for the children to point out their own breathing organs, and to find how the air gets to their lungs. Ask all to stand and draw a long, deep breath slowly, letting it out again in the same manner. Where did the air just taken in enter the body? Where did we feel it go? What parts did it pass through? Let the children try to think why the air passages in the nose are so crooked. Who can give reasons for the short hairs in the nostrils? How else can air get to our lungs besides through the nose? Which is the proper way to breathe? What are the possible dangers of breathing through the mouth?

Illustrate also, by charts or drawings, how the air gets from the nose to the lungs. Show the class at the same time the tiny blood-vessels through which waste matter comes to the lungs from every part of the body and through which oxygen goes to every part. Ask the class to notice the color of the blood in these tiny vessels when it is loaded with impurities, and again after it has got rid of them and has taken up the oxygen of fresh, pure air. Bright red blood shows we have plenty of oxygen in our bodies. We can see this good red blood in our faces when we have been out for a run. It shows we are strong and well and growing as we ought.

CARE OF THE ORGANS OF BREATHING.

When do we need to have pure air—air with plenty of oxygen in it? Each child should

give an answer to this question, until all know that such air is needed in every room in our houses, in churches and public buildings, in trains and street cars and wherever people or animals are or need to be.

How can we keep enough fresh air in our bedrooms at night? In our houses in the winter? Talk over with the children some easy method of ventilation which they can use in their own homes if necessary. Show how to arrange windows and doors to admit fresh air without causing a draft in which one might take cold. Ask different pupils to tell how they would air their bedrooms in the morning, and have the best plan written on the board. Why is it not sufficient to throw all the bedding together on a chair? What other rooms need special airing every day? Why do we need plenty of sunlight in our houses? Why is the air in the country generally purer than that in the city? Do we need much or little pure air in our lungs? How can we help our lungs to grow larger and thus able to take in more pure air? Show the children how to sit and stand perfectly erect with chest high, head up, chin, shoulders and hips back, mouth closed. Have each try to walk across the room with a book on his head until an erect carriage is secured. Tell them the story of

"Like a thought of God she goes
Wandering ever in the dance
Of her own sweet radiance."

UNCLE JACK'S CURE.

Horace was getting round-shouldered. His mother thought he studied too hard, and his father said it was because he was growing fast.

"I can straighten that boy up in a jiffy," said Uncle Jack when he saw Horace. "Just lend him to me for a month."

So Horace went to the country with Uncle Jack. He got up at six o'clock in the morning and took a cold bath and a run before breakfast. Then he and Uncle Jack took a breathing exercise together for five minutes every day.

They stood perfectly erect with heels together and arms at the side, breathing in slowly while Aunt Kate counted fifteen. They breathed out in the same way, repeating this ten times.

Then they brought their arms forward at full length with palms together aud threw them back vigorously, trying to touch the backs of their hands behind them. They did this twenty five times. Uncle Jack could make his hands meet easily, but at first Horace thought he never could. However, he did not mean to let Uncle Jack get ahead of him, so he practiced by himself and the third day he could do as well as his uncle.

Next they raised their arms above their heads as high as possible with the palms out. Then they bent slowly forward, keeping their knees perfectly straight, and tried to touch the ground with their fingers, repeating this ten times. Horace had to try a good while before he could do this, but of course he succeeded after a time. Boys never like to be beaten any more than girls do.

Horace worked and played a great deal outdoors. This gave him a good appetite for the rich milk, bread and butter, and the fresh fruits and vegetables of Uncle Jack's farm. When he went home his father and mother were delighted with his appearance. He was a good deal tanned and he looked strong and well. He walked as erect as his father.

"My coat is too small now I know how to breathe," he told his mother. "Uncle Jack says my chest will be as large as his some day, if I keep up my breathing exercises and don't get to smoking cigarettes."

"What difference do they make?" asked his father.

"Why don't you know? We learned all about that at school, and Uncle Jack told me the same thing. You see, there is a poison in all kinds of tobacco which gets into your nose and throat and the little tubes that carry air to the lungs, and makes them all red and sore.

If you smoke or chew you don't get enough fresh air and you do get a lot of poisonous stuff which keeps you from growing. Uncle Jack says he won't have people who smoke about him 'cause they smell so bad."

Horace's father smiled approvingly at his son. "I'm glad you went out to your uncle's," he said.

Try Uncle Jack's breathing exercise with your class; not long at a time, but regularly every day for one, two, or three months as needed, until every pupil sits, stands and walks erect and easily.

Tell them the story and have it reproduced orally, until your pupils are as well grounded as Horace in reasons for avoiding the use of tobacco in any form.

AUTHORITATIVE QUOTATIONS.

The tobacco habit impairs the vigor of the circulation, producing dyspepsia, short breath and constipation. — JAMES COLLINS, M.D.

The smoke when inhaled is brought into contact with more than five hundred cubic feet of surface in the lungs, with immense facilities for absorption, and at once the nicotine is deposited in a fruitful field and incorporated into the blood. — HERBERT BISHOP, M.D.

My experience shows that the cigarette habit when indulged in by boys is very injurious under all circumstances, and fearfully so when the smoke is inhaled as it generally is. It strongly predisposes to catarrh, consumption and permanent injury to the vocal organs. — J. D. BEECK, M.D.

ALCOHOL FAVORS LUNG DISEASES.

The statistics compiled by Dr. Bell of New York led him to the conclusion not only that alcoholic drinks did not prevent the development of tubercular disease, but that their use actually favored it.—[Bulletin Am. Med. Ass'n.

If we could effectually stop the use of all varieties of alcoholic drinks, and thereby do away with their depressing and paralyzing influence on the vital processes in living matter, with the poverty and mental wretchedness that ever accompany their habitual use, before the end of the first quarter of the incoming century, the prevalence and mortality from tubercular disease would have been diminished more than one-half.—[Journal Am. Med. Ass'n.

By the sickness and mortality reports of the English and American armies, it is apparent that soldiers who use regular rations of alcoholic liquors, furnish a higher ratio of mortality from tubercular disease than any equal number of men who do not use such liquors. So true is this that many army surgeons have regarded the free use of all drinks as one of the prominent causes of consumption.—N. S. DAVIS, M.D., LL.D., F.R.S.

THE ATTITUDE OF THE TEACHER.

SO important is the attitude of teachers toward this study in securing the best results, that pains have been taken this year to ascertain as accurately as possible the exact feeling among instructors throughout the country. In reply to our questions more than eighty per cent. of the answers received show that teachers feel a real and active interest, and of the remainder fully a third report their interest as fairly good. The fact that so large a proportion favor the subject and reveal a growing sympathy is no small cause for encouragement. The great body of God-fearing, child-loving men and women in the teaching profession is with us. One teacher emphatically says: "With a series of indorsed text-books I believe I can take a grade of a hundred children and so impress them with the danger of tampering with alcohol and tobacco that before the three years are gone nine out of every ten will be redeemed and saved from all these iniquities. Any teacher can do it and will do it who loves her children, who has their welfare at heart, and who desires that the hideous monster intemperance may be subdued."

Inquiries have also been made as to the attitude of state superintendents of public instruction and of other school officials toward this subject. Of the answers received on this point, sixty-five per cent. of the superintendents report in its favor, as do fifty-five per cent. of other educators. Experience in states where the strongest laws have been longest in force show that school officials whose personal habits are rebuked by this teaching, or those whose professional pique may be aroused, because this study has been thrust upon them, as they say, may at first oppose it, but as time goes on they either yield to the truth or drop out under the operation of the great law of the survival of the fittest.

The education of the children against strong drink is God's plan. Having done our part in this work as he guides, we can safely leave the enemies of his plan to his own providences.

CHLOE'S THERMOMETER.

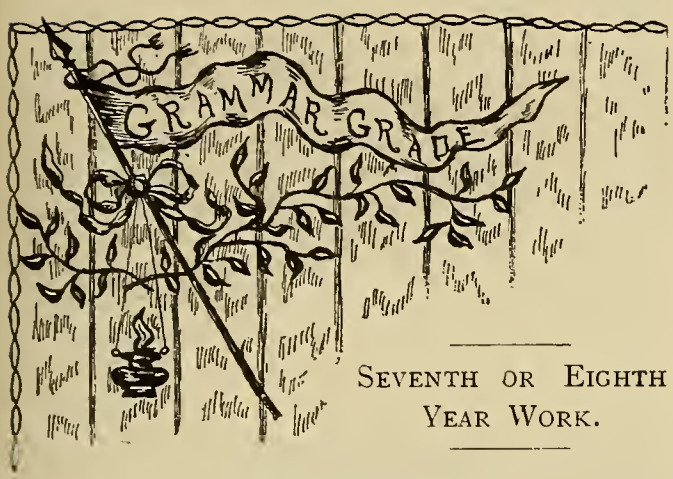
A careful mother purchased a thermometer for her colored nurse, so that she might be able to get the baby's bath at the proper temperature.

"I don't need no fermometer," said mammy, "I can tell when the water's right, missus."

"Why, how can you tell, Chloe?"

"If the baby gets red I know the water's too hot. If he gets blue I know it's too cold."

—Banner of Gold.



SEVENTH OR EIGHTH YEAR WORK.

THE NERVOUS SYSTEM.

THE world would laugh at the railroad company that should fit out its roads with the engines and cars of twenty years back.

"Time makes ancient good uncouth,"

and everything in the line of machinery must be strictly up to date in construction and equipment to enable the business man to hold his own in the teeth of fierce competition. Is it not wise to apply the same rule to men? The demands upon human intellect have increased equally with those upon machinery. A man who drove a stage coach fifty years ago, to-day holds the throttle of an Empire State Express. The Constitution framed for three millions of people and a narrow strip of Atlantic coast must now be stretched half across the globe and adapted to the needs of people from every zone and of every race.

The child of the future needs every advantage of education and training to fit him for his ever widening sphere of duties and responsibilities. Above all he needs health, a sound body and a pure and righteous soul. Without these essentials he can not reach the standard required of him, and the continued use of narcotics will debar him from each in turn.

Not one young person in a thousand clearly sees the relation which exists between total abstinence and his own business future. If he is to be a mechanic he needs a trained hand, if a scientist, a trained eye, but always a trained brain. The nervous system is the first to feel the poisonous effects of alcohol or tobacco, and when its integrity is shaken there can be neither accuracy of sense perception nor skill in the performance of duty.

Knowledge of these facts should be given every child old enough to comprehend them. To withhold it is but too often to make one's self responsible for weakened ability and for blighted lives.

THE NERVOUS SYSTEM AS A WHOLE.

Classes reaching the chapter on the nervous system are often so repelled by the difficulty of the subject as not to give it the study and thought of which they are perfectly capable. Prevent this attitude by giving them at the outset work which they can do. Hang a chart of the nervous system in front of the class when ready to assign the first lesson on the subject, and put this question on the board:

What relation exists between the nervous system and the different organs of the body?

Ask one pupil to find what the nervous system has to do with the organs of respiration, others how it is related to the muscles, the heart, the digestive organs, the skin, and so on through the list. In class, after individual study of these special topics, show how the human body differs from a mere collection of organs. Refer to Æsop's fable of the hands and mouth which refused to give any more food to the stomach on the ground that it did nothing for them in return, and trace with your class the real connection which exists between the different parts of the body. Ask why we need a president of the United States and a strong central government; then why the body has equal need of a great controlling center.

When the work of the nervous system as a whole has thus been brought before the class, take up with them the subject as treated in their text-books, showing how to analyze and set it off into topics.

WORK OF THE NERVOUS SYSTEM.

To receive sensations. To control every part
To direct motion. of the body.
To enable us to think, act and decide.

STRUCTURE OF THE NERVOUS SYSTEM.

Nerve centers:
Cerebro-spinal. Sympathetic.

Material:
Cells. Fibers. Connective tissue.
Membranes.

NEEDS OF THE NERVOUS SYSTEM.

Food. Exercise. Air. Sunshine. Rest.

ABUSE OF THE NERVOUS SYSTEM.

Over-work. Dissipation. Use of narcotics.

With a general outline of this kind before them, showing the important divisions of the subject, the class will be ready for intelligent work by themselves.

Go over each topic in advance with the class and give necessary hints regarding its preparation. Call attention to the differences between the cerebro-spinal and the sympathetic systems in appearance, function, and influence upon organic life. Which system is controlled by the will? How is it that we can walk or run without thinking about it? What is meant by reflex action? Why is it important?

Ask the class to make drawings of nerve-cells

and nerve-fibers, finding from their physiologies everything possible about the structure and function of each; also the difference between sensory and motor impressions.

Call for careful descriptions of the brain, the spinal cord, the medulla oblongata; the nerve trunks which have their origin in each; the bodily acts which each controls; the different arrangements of the white and gray matter. Ask the class to find how the cerebrum alters in appearance from youth to age. What reasons are there for thinking it is the seat of intelligence? How is it affected by thought, study, the skilful training of the hand or limbs? What mental faculties have their seat in the cerebrum?

Call for definitions of memory, reason, judgment. What advantages does each of these faculties confer upon man? How may each be cultivated? What is the will? What acts can we control with it? Why does it need training and education? Why is it easy to repeat what we have done many times before? What are habits? How are they formed? Why are they so difficult to break?

Give special attention to everything required for the highest development of the nervous system. Have the class find what proportion of the blood in the body is used by the brain. How will the power for mental work be affected by a poor or insufficient blood supply? What kind of food will be required to give proper nourishment to this part of the body? Why is it difficult to study in a close, poorly ventilated room? How does the necessary oxygen get to the blood?

How are the brain and nerves exercised? Why do they need exercise? Why is play as necessary as work? Why do students need a different kind of exercise from those who work on a farm? How is the mind developed by training the senses? Why is a variety of work beneficial? Why is it so difficult to study when one is sleepy? What is the danger resulting from over-work? Idleness? From bad temper, selfishness, evil thoughts?

THE EFFECTS OF NARCOTICS.

Before studying the influence of alcohol and tobacco upon the nervous system, every pupil should have a clear idea of the possibilities in education, in business, in life and character which lie before the boy or girl growing up strong in body, and pure of soul, with brain and nerves untrammeled by drugs or narcotics. It is said that Phillips Brooks was once asked to speak on temperance at a little fishing village. Instead of dwelling on the desolating power of alcohol, he spoke of man as God made him, as God wanted him to become and as he might be. Only towards the close of his address, when this picture stood out clear and fair before his audience, did he refer to the darker side and ask if any one could deliberately deface God's image, spoil his plan. Many of his hearers were rough drinking men, but no one had ever so moved them as this appeal to their best, and from that day many gave up their bad habits and strove to realize one good man's ideal of them.

Help your pupils to realize that health and strength and beauty are normal; that whatever destroys or weakens or mars is abnormal and wrong. They will then be ready to study the effects of alcoholic drinks and tobacco upon the delicate human organism, and finding how these narcotics injure and degrade, to keep themselves forever free from their taint.

Ask all the pupils to study the entire topic as given in their text-books, and in addition give to each a special question to look up. For instance, one may find how alcoholic drinks and tobacco get to the nervous system after they have been taken into the body, and be able to trace their course from a chart; a second may describe each and bring forward proofs of their poisonous nature; others may explain their effects upon the brain-cells, the nerves, the sympathetic system; upon reflex action; or upon the mental or moral powers.

An important point for class-room discussion is the question why injury to the nervous system through these narcotics is more serious than to any other part of the body. The class will have some idea from their previous study. Make this still clearer by an illustration. Which would cause greater damage in a city, the bursting of a single water pipe or the destruction of the entire reservoir? or which would delay business more, to have one telephone wire broken or the central office out of order? Bring up again the connection between the nervous system and the proper working of every organ in the body, and show how a disordered brain means inability to act or walk properly, to speak or think coherently, to reason well, to do delicate work of any kind.

Ask why the engineers on our best and safest roads are not allowed to drink or use tobacco. In what respect is the work of the human brain like that of the engineer? What trust has it to guard? What employments are open to the drinker or smoker? In which will these poisons be a help to any one? Where will they be received as recommendations?

Study with the class the question of habits in relation to this topic. Why is it easier never to smoke the first cigarette or drink the first glass of beer than to stop after one has acquired a taste for these substances? Why is it almost impossible to change one's habits, or to form new ones late in life?

Another point which calls for special thought is the delicacy of the nervous system in com-

parison with other parts of the body. It may not hurt a tin plate to drop it to the floor, but a fragile piece of china or a watch can not stand such rough treatment. Help your class to realize that the same is true regarding the nervous system. It is easily got out of order and with great difficulty made strong again. This is why so many hard-worked men break down and die in middle life; why so many women suffer from nervous prostration; why boys and girls grow up pale and thin and hysterical. Their nervous systems have been worn out by constant exertion without regular exercise and rest, or these sensitive nerve-cells and fibers have been poisoned by bad air or narcotics.

"All lost things are in the angels' keeping,
Love;
No past is dead for us, but only sleeping,
Love."

In glorious contrast to such life-failures, tell your pupils of the stalwart souls of history, who like Paul have kept the body under control, and like Browning

"Stand pedestaled in triumph."

AUTHORITATIVE QUOTATIONS.

ALCOHOL INTERFERES WITH NUTRITION.

Alcoholic blood parts less easily with its carbonic acid than does non-alcoholic blood. The brain is poorly nourished by blood containing too much carbonic acid. As time goes on, the incoördination of movement, desire, and will become more marked, the drunkard's moral and physical being becomes a wreck.—H. Wernicke Gentles, M.D.

ALCOHOL DESTROYS NERVE-CELLS.

Alcohol acts primarily on the nerve-cells, changing their granular matter, breaking up their nutrition and changing their dynamic force. The irritation and inflammation of the nerve-walls and fibres ending in sclerosis are common.—T. D. Crothers, M.D.

The action of alcohol when brought into the system in repeated small doses causes nerve destruction.—Drs. Kerr and Strümpell.

My experience is that no substance wastes and destroys brain-cells and impairs the tissues so rapidly, even when taken in moderation, as alcohol and its compounds.—I. N. Quimby, M.D.

Alcohol destroys nerve tissue.—Charles H. Shepard, M.D.

ALCOHOL CAUSES PARALYSIS.

There are two forms of alcoholic paralysis. In some cases it is local, one limb or one side of the body alone being affected, the mental faculties being at first quite normal. In other cases it commences with a stage of muscular feebleness, followed by mental incapacity and by loss of all volitional power. The muscles may retain some irritability, but the will is unable to control them. — F. H. McMichael, M.D.

The stimulating action which alcohol appears to exert on the physical functions is only a paralytic action. The cerebral functions which are first interfered with are the power of clear judgment and reason. The lively gesticulations and useless exertions of intoxicated people are due to paralysis, the inhibitory influence which prevents a sober man from uselessly expending his strength being removed.—Gustav Bunge, M.D.

From the very first alcohol affects the brain, the organ of the mind, and produces changes there of which the individual affected is quite unconscious. The alcohol is all this while paralyzing the highest and most sensitive fibers and cells. It is weakening the machinery by which judgment is exercised on actions done and impressions received, by which conscience acts, by which the will exerts its controlling influence over the thoughts, emotions, and actions. The man still looks like a man, but he has sunk below his level.—[Medical Pioneer.

ALCOHOL BLUNTS PERCEPTION.

The nervous system can not escape injury from the ingestion of alcoholic drinks. It fails to receive correct impressions; it fails to send out correct orders; it fails to receive proper rest.—[Journal of Inebriety.

ALCOHOL IMPAIRS MENTAL AND MORAL FACULTIES.

Many of the worst forms of nervous disease, including epilepsy and paralysis, are results of alcoholic indulgence. All authorities are agreed that a large proportion of cases of insanity are produced by alcohol. But even when taken in much smaller quantities than will excite the above diseases, alcohol is still potent to impair the intellectual and moral faculties. Perception is blurred, the intelligence clouded, sensation dulled, the disposition perverted, will power enfeebled, and the moral sense blunted. —[Medical Pioneer.

That a man is in a different mental state when intoxicated and when sober no one will deny. He says, feels, thinks, and does things which in a sober condition he would not have felt, thought or done. The cause of these changes, however, lies neither in the muscles nor in the skin, nor in any other part of the body, but simply and solely in the brain. It is a disturbance of the mental life.—AUGUST FOREL, M.D.

TOBACCO INTERFERES WITH GROWTH.

Stunted growth, impaired digestion, palpitation and other evidences of nerve exhaustion and irritability have again and again impressed a lesson of abstinence from tobacco which has hitherto been far too little regarded.—[London Lancet.

The tobacco habit stunts mental and physical growth and injects a virile poison into the system.—LAWRENCE J. FLICK, M.D.

To the young, tobacco is injurious in any form or quantity and at all times because, owing to the stage of development, the nicotine which it is impossible to prevent passing off with the smoke is in all doses hurtful, and even poisonous. It is wholly inadmissible in youth.—[London Lancet.

TOBACCO INJURES THE NERVOUS SYSTEM.

That smoke inhalation is a pernicious practice hardly requires argument, since it is plain that the larger the absorbent surface the more prompt and decided will be the narcotic action, and the combined effect of this with the more constant or frequent usage of tobacco that the cigarette habit favors, can not fail to be injurious to the nervous system, whatever the grade of tobacco, or whatever individuals may say to the contrary.—[Journal American Medical Association.

There can be no doubt that excessive cigarette smoking, especially in youths, acts injuriously on the nervous system.—[British Medical Journal.

TOBACCO DESTROYS THE MENTAL POWERS.

There is no question but that tobacco dwarfs in body and mind the boy who starts out to use it, considering himself smart, but who finds after he is in its clutches that there is no brilliancy in tobacco. It interferes with a man's being systematic and methodical; it favors slovenliness and destroys the finer sensibilities, together with the prospect for a truly fine and noble personality.—[A. P. REED, M.D.

The effects of narcotics, mental and bodily, are nothing but evil.—PROF. MILLER, of Edinburgh.

TOBACCO PERVERTS MORALS.

Boys who use tobacco are easily provoked, cross, unpleasant, and unable to work or play with vigor for any length of time. They more quickly resort to falsehoods and untruthfulness. Fathers and mothers are awaking to full knowledge of the mental decay and physical wrecking which follows the persistent use of this insidious youth destroyer. If our boys are to be manly men it will never be by the cigarette route.—EDWIN E. ASHLEY, M.D.

Youths who before the habit of smoking was contracted were resolute, manly and vigorous in mental fiber, become after indulgence in tobacco, timid, fearful, hesitating and irresolute. The mental stamina is gone and the quality of manhood produced is much inferior to that originally promised.—[Journal of Hygiene.

INDIAN SUMMER.

After the springtime sowing,
The restlessness of growing,
  The garnering and the reaping,
Time pauses,—and a hush
Stilleth the surge and rush
Of fevered life, for then
  Dear Summer cometh creeping
Over her earth again.

On clover meadows stark and brown,
On fields to stubble leveled down,
  Her waving breath is sweeter
Than the fragrance after rain,
  Her touch, like mother fingers
After ecstacy of pain.
  But her passing,—ah! 'tis fleeter
Than a smile in Sorrow's eyes,
  One mellow hour she lingers,
One tender June note tries,
  Then leaves a dream to winter,
And softly sleeping, dies.

—ALICE KATHARINE FALLOWS.

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"The world is caught in a wonderful net
Of beautiful, tremulous, golden haze,
And is laid asleep to dream and forget
That winter cometh and stormy days."

BUILD ON SOLID ROCK.

THE only institution that reaches all classes in our land is our public schools. If these were now universally teaching the evil nature of alcoholic drinks and other narcotics, we should soon have such a reënforcement of intelligent total abstainers as would carry dismay to the heart of the whisky ring; for the convictions of the boy are represented in the ballot of the man.

What we need is the bed-rock of solid, intelligent conviction on this subject in the minds of our people as a foundation upon which to build the temple of justice, where shall be meted out "Woe unto him who putteth the bottle to his neighbor and maketh him drunken."

To work for prohibitory law, neglecting the educational foundations, is to build the house on the sand; and when the rain of avarice in the traffic descends, and the floods of appetite come, and the winds of ambition blow and beat upon that house, with only the sands of uncertain public opinion for its foundation, it will fall. Let us see to it that our building is founded on solid rock.

POWERFUL EVIDENCE.

AN English clergyman attending the International Congregational Council in Boston last month, after traveling extensively in this country, said he was constantly impressed with the difference between the United States and England in the amount of drunkenness to be seen on the streets. In England, he said, one can go hardly a block without seeing a drunken man and often drunken women; here he saw scarcely a drunken person. What is the reason for this difference? England has a native-born population; we are yearly importing an alcohol-consuming population. In England, the temperance people for a number of years have been teaching total abstinence in their public schools by occasional Band of Hope lectures. Our plan provides for regular, systematic study by the children themselves. England's per capita consumption of alcohol is increasing; ours is not.

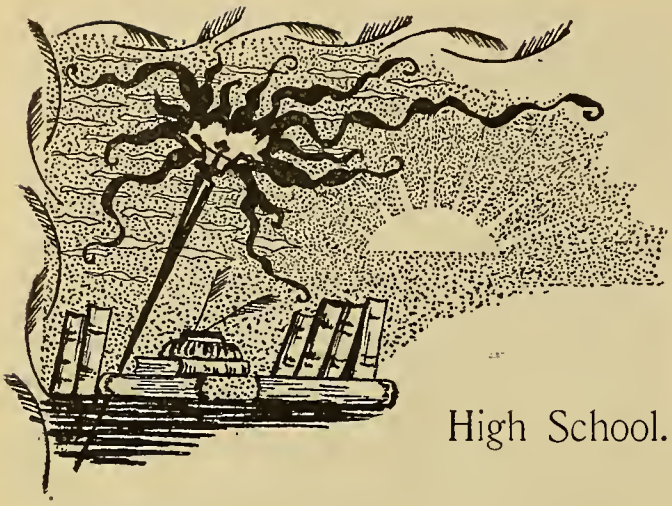
While not claiming that the difference between the two countries in these respects is wholly due to our system of temperance education in the public schools, the reports of its influence on business methods and home life, and the general intelligence of our people on the subject are evidence that this instruction has been a largely influential factor in keeping down the per capita consumption of alcoholic beverages in America.

A prominent journalist of Boston said recently, "You can not emphasize too strongly the change in public opinion against alcohol which has been going on among business men in this country during the past fifteen years. Merchants, bankers, railroad managers, in fact, employers of all classes now refuse to hire men known to be even moderate drinkers, because they say, "Alcohol unfits a man for service of any kind requiring responsibility or skill." Business men to-day say they can not trust a man who drinks; that alcohol clouds the brain and that therefore they will not employ a drinking man. That this changed sentiment is a result of an educated public opinion as to alcohol is obvious, and that temperance teaching in the public schools has contributed largely to produce this public opinion is self-evident."

An important evidence of the working of some powerful influence on the drinking habits of this country is furnished by the "United States Statistical Abstracts" which gives the per capita consumption of alcohol from year to year. These figures show a constant increase up to 1893. At the end of this time the temperance education laws were generally enforced throughout the country. From 1893 to 1898 there was no increase but a decrease. In 1898 the per capita consumption rose, but not to the point reached in 1893.

The past year, ending June 1899, has shown another marked decrease in the consumption of beer. It has also shown an increase in the consumption of distilled liquors, but undoubtedly a large proportion of this increase has been in the arts and manufactures, in consequence of the increase of business activity during the past year or two.

The knowledge the children carry home to their parents tells on the home life; it causes a perceptible increase in the temperance sentiment of the community. Children refuse to take alcoholics and to carry beer. School children organize anti-cigarette leagues, and the cigarette evil is greatly lessened. Marked improvement on the morals of pupils is also noticed after the introduction of this study.



High School.

PRACTICAL QUESTIONS ANSWERED.

THERE is a tree growing in India which at last becomes a forest in itself. From every limb no less than from the trunk roots strike into the soil, and from these in turn shoot forth other branches to repeat the process. Soon the ground is overgrown with a tangled thicket, difficult to penetrate, and almost impossible to remove.

Not more certain is the increase of this wonderful specimen of plant life, however, than is the spread of habits in the moral world. "One cigar will not hurt me," the boy asserts confidently; but the one grows into many, and the sweet-breathed manly youth is changed into the sallow, cigarette fiend. In the case of very many the danger-line lies between them and their first cigar or glass of intoxicating liquor, and no one can tell until perhaps too late whether or not he is of the number.

Nor is the danger confined to the spread of a single bad habit. One follows another like a flock of birds in their journey southward. Particularly is this true in the case of alcoholic liquors and tobacco, and the lesson which follows aims to substantiate this claim and to show some of the reasons why it has again and again been made. We suggest, therefore, as the next topic for high school study the question:

Why do smokers so often indulge in intoxicating liquors?

Separate the class into two divisions, asking one to study the subject from the standpoint of the effects of tobacco upon the system; the other from the standpoint of the effects of alcoholic drinks. When this has been done, compare the two in class and find what connection between these habits has thus been brought forward. The quotations which follow this lesson may next be examined in the same way, until all explanations which they give have also been noted.

Ask your pupils to consider a man's financial value in the world. Dr. Hillis reckons that it averages six hundred dollars a year, or is equal to capital worth ten thousand dollars invested at six per cent. How many of your pupils feel themselves competent to maintain this average in their own lives, even if blest with strength and the best of health? How many feel certain that they can accomplish as much handicapped with either the alcohol or the tobacco habit? Are life and success worth the risk?

AUTHORITATIVE QUOTATIONS.

Smoking leads to drinking. There are many persons who must take drink when they begin to smoke. Alcohol appears to give them sustainment.—Sir B. W. Richardson, M.D., LL.D., F.R.S.

Not only is tobacco the cause of widespread disease, but it lays the foundation for intemperance. The use of tobacco is one of those elementary forms of intemperance which opens the door for its more permanent and dreadful forms.—Henry Ward Beecher.

The salivary glands are so exhausted by the use of tobacco that brandy, whiskey or some other spirit is called for. Out of seven hundred convicts examined at the New York state prison six hundred were confined for crimes committed under the influence of liquor, and five hundred said they had been led to drink by the use of tobacco.—Dr. Stevenson.

Logically, we might expect that the person who indulges in tobacco, will also indulge in alcohol. So far as my experience goes, nearly all inebriates are either chewers or smokers who first indulged in the use of the weed and subsequently took to their cups. Tobacco in any form produces thirst and a desire for drink of some sort. Further than this, I believe smoking produces a morbid desire for an artificial drink.—Geo. N. Comings, M.D.

The exceptions are very rare, when a user of tobacco in any of its forms is not ultimately led to use alcoholic liquors.—Dr. Cowan.

Tobacco creates thirst and vital depression and to remove these the use of liquors is often resorted to.—James Copeland, M.D., F.R.S.

Smoking and chewing tobacco, by rendering water and other simple liquids insipid to the taste, disposes very much to the use of ardent spirits. Hence the practice of smoking cigars has been followed by the use of brandy and water as a common drink.—Benjamin Rush, M.D.

The use of tobacco is one of the powerful accessories of the temptations to drinking which surround British youth.—H. Smith, M.D.

The use of tobacco is the occasion of harm second only to that of alcohol.—C. H. Shepard, M.D.

Smoking produces a dryness of the mouth and throat, and a corresponding thirst. This thirst is morbid and not to be satisfied easily with that which allays natural thirst. It craves something stronger. Also the nervous depression induced by the use of tobacco finds a temporary relief in beer, wine, and other alcoholics. These two causes then, the thirst and depression, are powerful temptations to drinking.—[Journal of Hygiene.

Has not the time fully arrived when those who recognize in alcohol a race enemy and one of the most potent causes of race deterioration, which at the present time is becoming so painfully evident, should also recognize in tobacco the strongest and most active ally of alcohol; and should not those whose efforts are directed toward the suppression of alcoholic intemperance seek likewise to oppose in every legitimate manner its brother evil, the tobacco habit, not only on account of its intimate relation to the alcohol habit, but also on account of the evils which are the direct outgrowth of tobacco intoxication itself?—J. H. KELLOGG, M.D.

The laboring man and his family have no worse enemy than tobacco. "It often leads to drink," says Dr. Chalmers, "and drink leads to the devil."—[Journal of the American Medical Association.

Perhaps one of the most characteristic effects of tobacco is the excitation of the vaso-constrictors produced by it, as is evidenced by extreme pallor of the skin. Alcohol, on the other hand, produces, in moderate doses, the very opposite effect. The smoker finds himself suffering from dryness of the throat, thirst, general depression of spirits, perhaps slight giddiness, and some cerebral anaemia. It requires but a single experiment to convince him that beer, wine or whiskey, or alcohol in some form affords very prompt relief from these distressing symptoms; hence the very natural association of cigars with wine or beer. The user of these two drugs, by their alternation, is enabled to secure a repetition of pleasurable sensations long after tobacco alone has ceased to elicit pleasurable responses to its stimulus by reason of the development of its recognized toxic effects.—[Bulletin American Medical Ass'n.

Tobacco weakens the memory, vitiates the appetite, produces vertigo, enfeebles the action of the heart, depresses vitality, leads to intemperance, arrests development, causes insanity, amaurosis, deafness, laryngitis and cancer of the lip, and makes men content with conditions needing reform.—MATTHEW WOODS, M.D.

The use of tobacco is usually begun at an earlier age than the use of alcohol (that is true at least in the United States), the use of alcohol being later grafted on as a result of the associations to which the use of tobacco leads. The use of tobacco creates a demand for the use of alcohol, (a) by the production of a drug habit which naturally leads to the development of other habits of kindred sort, and (b) by the production of morbid conditions and discomforts from which alcohol affords temporary relief.—[Bulletin American Medical Ass'n.

"No shade, no shine, no butterflies, no bees,
No fruits, no flowers, no leaves, no birds—No-vember."

THE BUILDING OF THE NATION.

II. The Rights of the Individual.

"WE hold these truths to be self-evident: That all men are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are life, liberty and the pursuit of happiness." (Thomas Jefferson, in the Declaration of Independence.)

While Hamilton and the Federalists were apparently carrying everything before them on the high tide of success in establishing the government under the Constitution, there was at work another set of forces which was to exert an equally strong influence on our national life.

The question as to the adoption and the interpretation of the Constitution had, as we have seen, given birth to the first genuine political parties in the United States. On the one side, were Hamilton and the Federalists believing that the great need of society was a government strong enough to do justice and preserve order. On the other, were those who believed that there was too much governing in the world; that all men are capable of self-government, and therefore that any strong government, of which their only example was a monarchy, was opposed to the best interests of the race. Such was the belief of the Anti-Federalists, later known as Republicans, Democratic-Republicans and finally as Democrats, the name we know at the present day. As the Federalists had their leader, and their cause a champion in Hamilton, so the Democrats, as we shall now call them, had a leader no less powerful, but of a totally different character, in Thomas Jefferson.

To understand Jefferson's principles, it must not be forgotten that while the cause of liberty had first borne fruit in America, events in France had long been preparing for the great struggle that a little later was to change the whole current of individual thought and national life throughout Europe.

Years of cruel oppression and tyranny in France had strained the patience of the people to the point of breaking. Such were the demands of the kings that the greatest poverty and misery existed all over the country, while corruption of the worst kind pervaded court and councils. Seeing that these evils which were not wholly peculiar to France prevailed where kings ruled, it is not strange that many, Jefferson among the number, came to believe that everything might be bettered if the power were wholly in the hands of the people. They failed to distinguish between the lawful power of government and the tyranny of government, insisting that men everywhere were fit to rule themselves and that personal interest would be sufficient safeguard against anarchy.

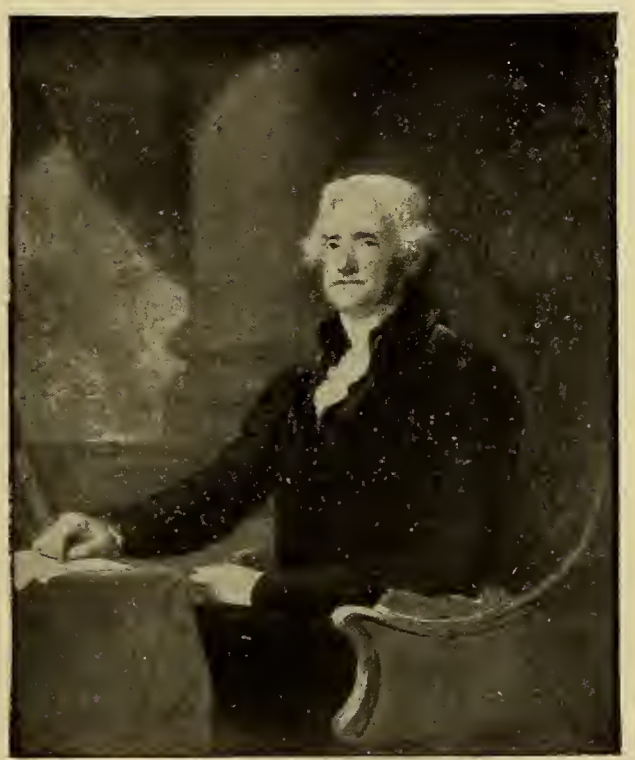
For five years, during the Confederacy, Jefferson was in France as American ambassador, and in close touch with the French leaders of the movement for freedom; therefore, when he returned home in 1789 and became Washington's secretary of state, his own natural inclinations toward a mild form of government had been greatly strengthened by foreign influence. To a man of such convictions, the American government, which had been modeled in many respects on the English form, seemed to tend away from rather than toward the extension of personal liberty, and it was not long before Jefferson became the soul of the then feeble Anti-Federalist party, inspiring it to new action with new purposes. "The God who gave us life, gave us liberty at the same time," said Jefferson. His beliefs, therefore, as they became the Democratic principles, were based on this conception of universal freedom.

The Democrats urged the importance of a simple frugal government, opposed to all display or to anything even resembling royalty. Jefferson ridiculed Washington's formal public receptions and quiet dignities, and when he himself came to the presidency conducted public and social functions with a simplicity almost ostentatious. There is a well known tradition that he rode to the Capitol on horseback to deliver his first inaugural address and dismounting, tied the horse to a tree with his own hands; while Mr. Madison has told how Jefferson once received a foreign ambassador, with disordered dress and in a manner indicating extreme carelessness as to form or ceremony.

Equal and exact justice to all men of whatever state, of whatever faith, religious or political, a jealous care of the right of election by the people, and love of peace were cardinal points in his political and social creed. He dreaded war above all things. "The most successful war seldom pays for its losses," he once said; and so he never favored the creation or support of an army or navy. While governor of Virginia during the Revolution, and again in his second term as president when the interference of both France and England toward our commerce made war seem almost unavoidable, he could not bring himself to make any preparations for conflict, until actually driven to it by events. In the latter case, he did so far yield as to have built some tiny gunboats which ever since have been regarded as a national joke. They were very inexpensive, at least he reckoned that about twenty-five could be built for $100,000, and were to be kept under cover until the enemy should appear, when they were to be carted down to the water and manned by the neighbors.

Jefferson was peculiarly keen in understanding men. It has been said that one of the great causes of the defeat of the Federalist party was that its leaders held aloof from the

people as a whole. Jefferson, easy of access, skilfully kept in touch with all the varying undercurrents of political life, so that with his wonderful intuition he was always able to tell whither they were tending and how he best might guide them. He seldom spoke in public, but with a letter to one leader, or a few suggestive words to another he often quietly shaped the course of his entire party. From his intimate knowledge of human nature, he was sure that his principles were justified by what he believed would be their influence upon society. Under a free popular government, he saw that men would be improved intellectually and morally, that the decisions necessary to framing rules for the government would develop individual will and self-respect; that to perform his political duties properly a citizen must be well informed, and to this end he must have a good education. All danger of rebellion or revolution would be avoided because a man would not rebel against his own government which he had helped create. As each man had to think for himself in political affairs, he would grow more and more independent in all other lines of thought, and trade and material prosperity throughout the country could not fail to be increased.



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Thomas Jefferson.

On becoming president, Jefferson had an opportunity to put his principles into practice. But instead of rudely overturning customs and methods that had now become somewhat fixed by the usage of three administrations, he entered quietly upon the duties of his office, wisely showing a most friendly spirit to his political opponents. Any violent action by the Democrats at this time might have resulted disastrously to the little nation and much credit is due them, and especially to Jefferson, that the change in administration was made so reasonably.

Vigorously as the Democrats had opposed the Federalist policy in the past, its foundation principles were left unchanged during Jefferson's administration, and whatever differences were noticeable were due rather to external than to internal change. All could see that there was less formality in the president's receptions than in the time of Washington and Adams, that when the internal taxes were abolished the treasury still prospered, while the national debt had never been so rapidly paid; though the Federalists claimed, and perhaps not without some justice, that this happy state of affairs existed in spite of, not because of the abolition of internal taxes, being merely a continuation of the prosperity which followed in the train of Hamilton's financial system. So tranquil and prosperous was the whole country during Jefferson's first administration that the Democratic party became wonderfully popular, and the Federalist political power dwindled until it seemed likely to come to a speedy end.

It is interesting to notice that Jefferson not only left undisturbed the great essential principles of the Federalist policy, but used them in a way that would have done credit to any Federalist leader. In the matter of the Louisiana purchase, he frankly admitted that the Constitution gave the government no right to acquire additional territory, but he considered it so essential to the future growth and welfare of the nation that he authorized the purchase and looked to Congress to uphold his course. Nor was his confidence misplaced. So strong was his personal hold upon the people that in spite of the loud protests of the Federalists, Congress promptly rallied about him and ratified his action. Results have entirely justified his courageous and far-seeing though politically inconsistent course.

Jefferson had strongly opposed the Federalist plan for internal improvements, claiming that they drafted too heavily on the country and delayed the payment of the national debt; yet in his message to Congress in 1806, he recommended the devotion of public money—the surplus, it is true—to purposes of public education, to roads, canals and rivers, on the ground that "By these operations the lines of separation between the states will disappear; their interests will be identified; and their union cemented by new and indissoluble ties." So much did the theory of states' rights yield to necessity.

In the national excitement caused by the Alien and Sedition Acts passed in Adams' ad-

ministration, it was Jefferson who drew up the Kentucky Resolutions declaring the acts unconstitutional and the right of any state to nullify, that is to refuse to enforce them, and so to withdraw from the Federal compact. Yet, in his own administration, when some of the New England states whose commerce was being destroyed by the Embargo Acts talked of secession, Jefferson called their proposed course treason. On the whole, however, perhaps no other man could have led his party so wisely in avoiding political snags. Of course the Federalists whose bitterness against the Democratic administration seemed to increase as their numbers decreased, were not slow in discovering that the Democrats were to a large extent reaping the benefits of what their opponents had sown, and took no pains to conceal their discovery.

But in spite of the many apparent inconsistencies of the Democratic policy, much credit is due Jefferson as its leader for his readiness to set aside theory if he saw that by doing so the welfare of all the people might be promoted. He had often to choose between holding to his lifelong beliefs, and what he clearly saw was for the benefit of the nation, and it is perhaps better in this respect than in any other that his true sincerity is shown. First and foremost he placed individual freedom and development, and if this could not be obtained according to his theories of what ought to be done, he was ready to sacrifice theory to tried and practical methods.

The secret of Jefferson's influence, which has probably been greater in our history than that of any other man save Washington, lay in his faith in the people, and his faith in the ultimate triumph of the principles for which he stood; and though practice often clashed with theory, the general tendency of his purposes and policy was to inspire in every man, however humble, the love of liberty that would dignify and educate him in shaping his own government. The result has been that while our government has kept the strong executive character given by the Federalists, this character has been kept truly democratic by the universal knowledge of the power of the individual.

It was the principles of freedom of press, of person, of justice, of elections, and of religion that Jefferson sought and successfully to stamp upon the hearts of the people. These are now recognized by every one as fundamental facts in our national belief, and to Jefferson and his party must be given the honor of contributing this noble feature to our national life and purpose.

"No man is born into the world whose work
Is not born with him; there is always work
And tools to work withal for those who will."

THE FALLING LEAVES.

Lightly He blows, and at his breath they fall,
The perishing kindreds of the leaves; they drift,
Spent flames of scarlet, gold aerial,
Across the hollow year, noiseless and swift.
Lightly He blows, and countless as the falling
Of snow by night upon a solemn sea,
The ages circle down beyond recalling,
To strew the hollows of Eternity.
He sees them drifting through the spaces dim,
And leaves and ages are as one to Him.

—Charles G. D. Roberts.

HE WASN'T AFRAID.

Little Tommy and his younger sister were going to bed without a light. They had just reached the bottom of the stairs, when Tommy, after vainly endeavoring to pierce the darkness, turned round and asked:

"Ma, is it polite for a gentleman to precede a lady when they have to walk in single file?"

"No, my son," replied the mother, "the lady should always take the lead."

"I thought so," said Tommy delightedly; "go ahead, Sue."—[Pearson's Weekly.

"The harvest is gathered and autumn stands
Serenely thoughtful, with folded hands.
With half a smile and half a sigh
We ponder the past that has hurried by:
See it and feel it and love it all,
Content it has vanished beyond recall."

The mistress—Be very careful, Marie, when you give little Algernon a bath. He shrinks from it so.

The new nurse—Do he, me'm? That's bad. Wid two or three more shrinkin's there'll be nothin' left of him. — [Cleveland Plain Dealer.

"Tommy," said the teacher, "is there any difference between the words 'sufficient' and 'enough'?"

"Yes'm," replied the youngster. "'Sufficient' is when mother thinks I have eaten enough pie, and 'enough' is when I think I have eaten sufficient.'"—[Troy Times.

The fine half-tone illustration of Thomas Jefferson which appears on page 47 is made from a photogravure published by A. W. Elson & Co. We are able to give it to our readers through the courtesy of this firm.

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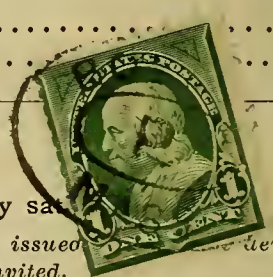

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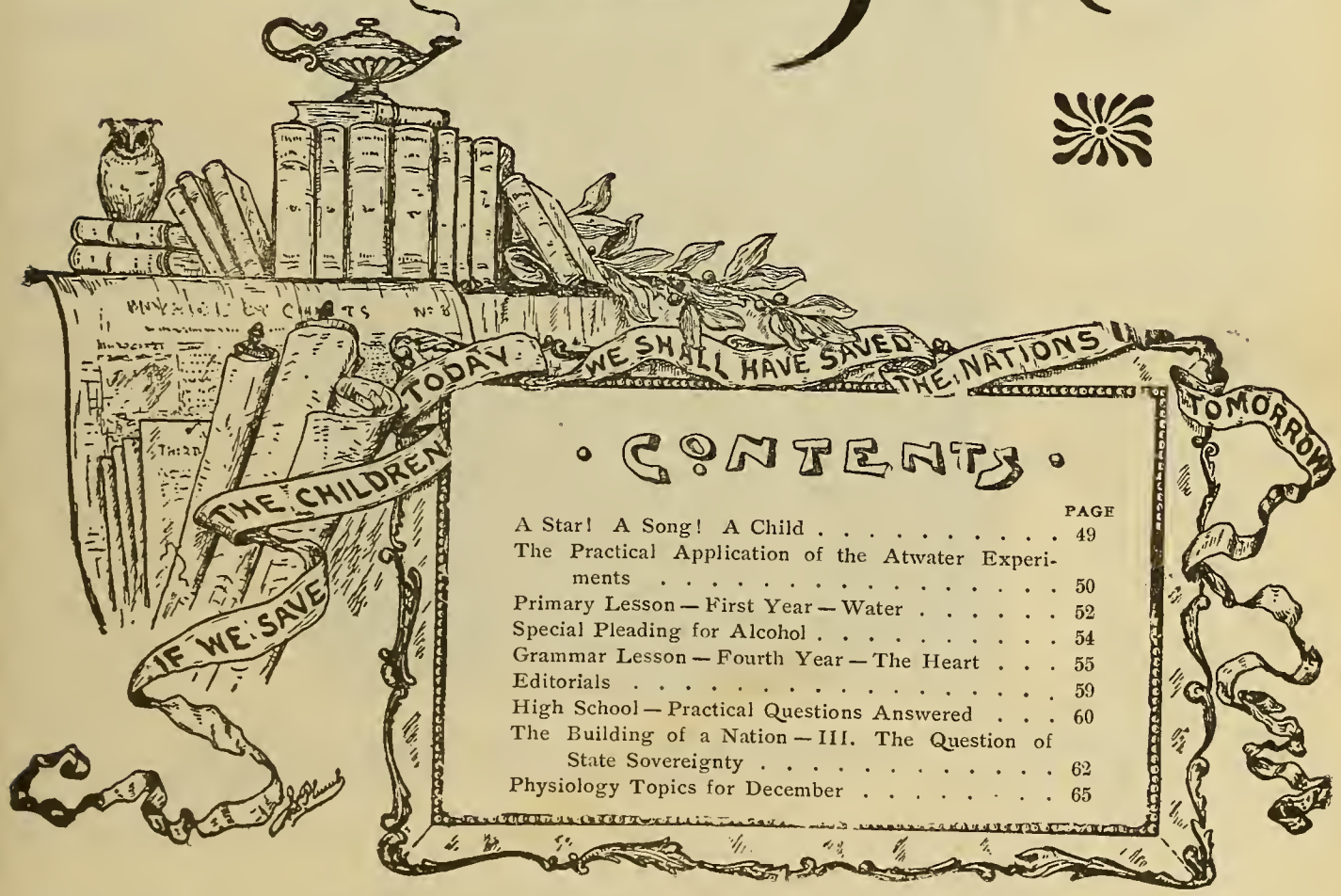

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A STAR! A SONG! A CHILD!

A STAR, that made the rest seem dim, flamed in Judea's skies;
Far in the East at first it shone, and led the travelers wise,
Until their hurrying feet were stayed upon a threshold low;
Where they might find their heart's desire, and love and gifts bestow.

A song, most strangely sweet and glad went thrilling through the night,
And far afield the shepherds heard with mingled joy and fright;
O'erawed they hid their dazzled eyes, for all the radiant air
Was filled with angel hosts who sang the song beyond compare.

A Child, for whom the troubled world had longed and hoped, and prayed;
A Child, who might a palace grace, in lowliest manger laid.
No rush of earthly servitors, no guard around him thrown—
The city slept nor knew a King had come unto his own.

"Behold, I bring you good tidings of great joy, which shall be to all people."

O star! O song! O holy Child! we tell their story o'er;
Our cares slip off, our hearts grow young, and we are glad once more.
This poor old world forgets her woes, and puts her doubts away,
And worships at the feet of Christ this blessed Christmas day.

—EMMA A. LENTE.

A CHRISTMAS CAROL.

GOD rest ye, merry gentlemen, let nothing you dismay,
For Jesus Christ our Savior, was born on Christmas day.
The dawn rose red o'er Bethlehem, the stars shone through the gray,
When Jesus Christ our Savior was born on Christmas day.

God rest ye, little children; let nothing you affright,
For Jesus Christ, your Savior, was born this happy night;
Along the hills of Galilee the white flocks sleeping lay
When Christ, the Child of Nazareth, was born on Christmas day.

God rest ye, all good Christians; upon this blessed morn
The Lord of all good Christians was of a woman born;
Now all your sorrows he doth heal, your sins he takes away;
For Jesus Christ, our Savior, was born on Christmas day.

DINAH MARIA MULOCK.

DECEMBER.

. . . With snow-white hair,
I come, the last of all. This crown of mine
Is the holly; in my hand I bear
The thyrsus, tipped with fragrant cones of pine,
I celebrate the birth of the Divine.
My songs are carols sung at every shrine,
Proclaiming: "Peace on earth, good will to men."

—HENRY W. LONGFELLOW.

FROST WORK.

These winter nights, against my window-pane
Nature with busy pencil draws designs
Of ferns and blossoms and fine spray of pines,
Oak-leaf and acorn and fantastic vines,
Which she will make when summer comes again,—
Quaint arabesques in argent, flat and cold,
Like curious Chinese etchings.—By and by,
Walking my leafy garden as of old,
These frosty fantasies shall charm my eye
In azure, damask, emerald and gold.

—Thos. Bailey Aldrich.

THE PRACTICAL APPLICATION OF THE ATWATER EXPERIMENTS.

Scientific Drinking in Business.

I AM not a scientist, and lay no claim to qualification to discuss the problem from that standpoint. I am willing to leave to the doctors and the professors the theoretical speculation and experimentation as to just how much alcohol a man can consume before it hurts him enough to show it; but I should like to make an appeal to daily experience and ordinary common sense.

If some bright young railroad man should secure from Professor Atwater a letter of recommendation, saying that the young man used alcoholic liquors very moderately and carefully, drinking say not over two or three glasses of beer a day, that is, not exceeding the safe and beneficial scientific modicum of two and one-half ounces of absolute alcohol; and the young man should take this letter to the Chicago and Alton railroad and apply for a job as brakeman (not as engineer or conductor, but even as brakeman) he couldn't get the job, for the company will not employ in any capacity a man who drinks at all, or who even enters a saloon. The Lehigh Valley road and other great corporations have had similar rules for years, and the Consolidated Railroad in our own state has lately followed suit.

The Chicago Tribune, commenting editorially upon the Alton road's rule, says that the great railroads have no use for even the moderate drinker, for such men are unsafe and unreliable, as their heads are likely to be muddled, greatly endangering the traveling public.

Such a letter from Professor Atwater would be a very damaging document to accompany an application for life insurance, and not a few of the more conservative and prosperous companies, including some of the largest of the companies, would decline to issue a policy to an applicant who made a daily practice of imbibing two and one-half ounces of alcohol. Such a man would not be considered a desirable risk by any reputable company.

I do not believe that any great commercial house where alertness of mind and action are required to meet the needs of competition, would look with favor upon any young man applying for a clerkship, and bearing such a letter of recommendation from Professor Atwater, indorsed by the whole Committee of Fifty, declaring that the applicant was a purely scientific drinker, consuming not to exceed two and one-half ounces of absolute alcohol daily.

Is the best business sense in advance of science, and if so, does it stand where science must eventually come; or will science compel these business men to abandon their fanciful caution, and restore to their employees the beneficial privilege of imbibing two and one-half ounces of alcohol daily?

The average human system is able to burn up a considerable quantity of alcohol, but vitality is destroyed not energized in the process.

An overwhelming array of facts could be cited from business experience, athletics, army service, Arctic exploration, epidemics, and even the prize ring, showing that total abstainers have better physical and mental endurance than moderate drinkers.

Daily experience and common sense everywhere demonstrate the fact that alcoholic drink is a degenerating influence, and every man who tries it tampers with his own welfare. A very practical question for the young man of to-day is, whether he puts a lower estimate on himself than prudent business corporations and life insurance companies do.—Allen B. Lincoln, in Hartford Times.

Scientific Drinking in Real Life.

We do not believe that Professor Atwater likes the company in which his unfortunate utterance has placed him. Indeed, he has publicly stated his temperance principles. But none the less, his pronouncement that alcohol is to be classed with the foods and not with the poisons will make still harder the not too easy battle of health against disease, purity against impurity, temperance against intemperance.

One is reminded of Bret Harte's poem in which he tells how there was found in California a wonderful spring. Whoever drank of it discovered to his delight that his skin became fair, his eyes began to sparkle, his cheeks grew plump, he was renewing his youth. Great crowds flocked to the place, and the enthusiasm was at its height, when a mysterious sickness seized every one there. The spring was charged with arsenic.

Professor Atwater's statement furnishes the most conspicuous instance we have seen of the fatal tendency among scientific men to leave the soul out of account. Alcohol may enable a man to contract his biceps as many times for a given amount of the substance as for the same amount of sugar or fat or starch. What of it?

Men do not grow crazy for sugar. Men do not get drunk on fat. Starch is not filling our jails, our poorhouses, and our insane asylums. Alcohol may preserve from consumption the fibers of the body, but how about the mental fiber? A beefsteak will not make a husband kick his wife. A cup of cocoa will not send a boy reeling into the gutter. Mince pie may bring on dyspepsia, but not delirium tremens. There is something about us that no scientist has ever weighed in a scale or measured with a micrometer or confined to a test-tube. Nevertheless, it is there.

No juggling with names can do away with the terrible fact that the tasting of alcohol is one of the most seductive dangers on earth to-day; that no will, however masterful, is proof against the passion when once it gains a foothold; that the very man on whom Professor Atwater made his experiments risked much when he let the tempting liquor pass his lips. If man had no reason to lose, no affections to imperil, no honor to blunt, in short, no manliness to weaken, he might afford to call alcohol a food, and to use it as dogs use meat and babies use milk.

But man is more than a brute, more than an object in a metal case; and whatever the scientist may call alcohol, it is the universal experience that life is poisoned by it, the home is poisoned by it, politics are poisoned by it, society is poisoned by it, and it is the food of hell.—[Christian Endeavor World.

"Glory to God in the highest, and on earth peace, good will toward men."

THE DANGER IN NARCOTICS.

Many a one of highest gifts and noblest character has gone under in the insidious maelstrom spread by opium for its victims. Using the drug at first as prescribed for the relief of suffering, he is scarcely conscious of danger before being swept on to destruction. The first phenomenon is deadening of sensibility, accompanied by mental exaltation if the dose be small. This is succeeded by unnatural sleep, disturbed by fantastic dreams. On awakening there is great depression of mind and body, often associated with defective memory, and a feeling that something terrible is about to happen. There is muscular weakness, distaste for food without actual nausea, and an almost irresistible craving for another dose.

If the habit be continued further, mental and physical changes occur. Distaste and inaptitude for any kind of exertion, greatly impaired digestion, deficient secretion of bile, sluggishness of the muscles of the intestines causing constipation. The muscles waste, the skin shrivels and the person looks prematurely aged. The pulse is quick, the body feverish, the eye dull, except just after the drug has been taken. The final result is failure of the nervous system.—H. Newell Martin, M.D., F.R.S.

The symptoms characterizing the morphine habit all refer to an unstable nervous state of either the body or the mind. The bodily symptoms are emaciation, weakness, ataxia, and pareses of the sphincters which Levenstein and other writers have included under the name of morphinism, in contradistinction to morphinomania, under which term they include loss of will-power, moral insanity, imbecility, and other mental perversions.—[Journal of Inebriety.

The mental faculties are among the first to suffer from the use of opium. When taken by the stomach, it destroys all desire for food, and not infrequently brings about nausea and vomiting. Upon the bowels the paralyzing effect is marked. The kidneys seem to be paralyzed and do not perform their functions well. Those addicted to opium grow old fast, their eyes grow dull, their faces are without expression, their skin becomes yellow and generally greasy. —[Journal of Nervous and Mental Diseases.

Primary Lesson.

FIRST YEAR.

WATER.

AN old-fashioned recipe for a happy day calls for

"A little dash of water cold,
A little leaven of prayer,
A little bit of sunshine gold,
Dissolved in morning air."

To the average person in health the daily cold bath is not only a luxury but a positive necessity. It promotes cleanliness and tones up the system, giving mind and body vigor for fresh enterprises and increasing one's store of vitality.

Children, however, often feel an unaccountable dread of water and shrink from its personal application. When such aversion exists approach the topic from some other standpoint. Tell them in story form of the different shapes which water assumes, of its beauties in color and sound, and of its relation to all animal and vegetable life. Take up the topic of cleanliness last of all, including the use of water in keeping ourselves as well as our houses sweet and clean.

Something of the story of Booker Washington and what he has done for the Negro may be brought in at this point. Tell the children of Mrs. Viola Ruffner, the kind woman who taught him as a boy to keep himself always clean and neat, then to be prompt, thorough, and honest in whatever he did, until this had become the habit of his life and brought him success and honor.

Rudyard Kipling says he never yet has known of a man with the right to wear the Victoria Cross who has not the strictest ideas about keeping himself clean. Tell the children what the Victoria Cross is, to whom it is given, and why this simple bit of bronze is so prized. Bring out the thought that purity and bravery should always go hand in hand, and by story and illustration inspire the children with the desire to keep themselves within and without as spotless as England's best knights of chivalry.

FORMS OF WATER.

Bring into the class an illustrated copy of Tennyson's "Brook." Read the poem aloud very slowly, showing the pictures as you go along. Talk it over with the children, encouraging them to ask questions and talk freely about the poem and the pictures. Explain the meaning of all new words. Ask how many have seen a brook or any stream of water. Did it look like the one which Tennyson tells us about? How was it different? Where else have you seen water?

Let the children describe bodies of water they are familiar with; the ocean, a brook, river or lake, water as it comes into the houses in pipes, as it falls from the clouds in rain, or as they have seen it standing in wells, springs or tiny pools. If any in the class have seen the ocean ask them to tell one difference between its water and that found in rivers and lakes. Which water is good to drink? Which is better to bathe in?

Bring the sand map into play and let the children make for themselves these bodies of water in miniature.

Talk about other shapes which water sometimes assumes. Where does the rain come from? Point out the clouds in the sky. Show that they are made of tiny particles of water, by boiling water in a tea-kettle where the children can watch the clouds of steam escape. Hold a slate in front of the spout and let the class observe the drops of water left on its cold surface. What becomes of the water in the kettle when it boils away?

How many have seen a foggy morning and remember what it is like? Who has watched to see what becomes of the fog when the sun shines brightly on it. Tell the children that fog rises to form clouds in the sky. How do the clouds look when it rains? How do they look in the morning and evening when the sun shines on them. What colors have you seen in the clouds?

Who has seen a rainbow? What colors has it? Place a glass of water where the sun strikes its surface, and let the children find the rainbow thus formed. Tell them the Greek myth of the rainbow, called Iris, the beautiful messenger of the gods.

Choose a cold, sparkling morning for a talk on frost and snow as forms of water. Introduce these topics by relating one of Anderson's Fairy Tales, perhaps "The Snow Queen" or "The Ice Maiden." Then ask if there are any fairies nowadays. How many would like to see one?

Show the delicate frost-work which forms on the windows, and on twigs and branches of the trees. Tell the children that although they have not sharp enough eyes to catch the frost fairies at work, yet they can see what some of them do.

Place small bottles of water in a bed of crushed ice and salt, and let the children watch the slender threads of ice shoot out from the sides of the bottle as the water freezes.

How does fairy Jack Frost change the rivers and brooks when winter comes? What does he do on window panes? Where else have you seen his work? We can imagine we see his long white fingers in the icicles which hang down from the trees and roofs.

What do we find on the ground after a storm in winter? What does snow turn into if we keep it in a warm place? When the next snow-storm comes catch some of the large flakes and point out their beauties to the children. Help them notice also their shape and size. Call attention to the fact that the snowflakes, although so tiny, help to make the huge drifts which sometimes stop railroad trains and delay travel.

If any in the class have seen a hail-storm ask these children to tell the others about it. What do hailstones look like? What becomes of them if we hold them in our hands or bring them near the fire?

USES OF WATER.

If there are plants in the windows, as there should be in every schoolroom, let the children watch with you for the unfolding of each new leaf and blossom. Plants do not eat food as we do. What do we give them to make them grow? What would happen to them if we should forget to give them water?

Ask the children how many things they can see from the schoolroom windows and door which must have water to keep them alive. Let them make their own discoveries until they decide that

Every tree and plant needs water to make it grow.

Who can think of something else besides plants which is alive and growing? What do the birds need besides food to keep them alive?

Find what pet animals the children have at home and talk with them about the care they need. Remind them that they must have fresh water every day placed where they can easily help themselves to it, because

Every animal needs water to keep it alive and make it grow.

Talk with the children about water as the best drink for everybody. If we should give the dog or kitty their choice they would always drink milk or water. They do not like tea or coffee or beer. Are these drinks good for us? If we want to keep well and grow fast we must use as much common sense as do our pets.

Pure cold water is the best drink for every one.

"The sweetest name that mortals bear,
Were best befitting thee."

Who knows another use for water? How do we keep our hands and faces clean? our houses? Who has ever seen a bird take his bath? Why do we use the lawn-sprinkler when our flowers look dry and parched? How do we keep the streets from getting dusty? What good does the rain do?

Let the children express their own ideas before giving any suggestions, but make sure that they realize the important part played by water in securing cleanliness of person and in keeping our houses and all about us clean. By suggestive questions help them to see the usefulness of rain not only in helping the plants to grow but in keeping them clean, in washing the outsides of our houses, the trees, fences, roads and every object in nature. Even the smallest child can understand these facts and know that

We need water to keep everything clean and sweet.

How is water used in cooking? What vegetables and meats do we boil in water? What does the water do to them? Who has seen a mill which is run by water? Where does the steam come from which drives our locomotives? Show pictures of steamships on the ocean, of steam-threshers and steam-plows at work, and ask the children to name any other kinds of machinery they have seen which are run by water or steam, bringing out the thought that

We need water to run machinery and help us do our work.

Read aloud parts of Shelley's poem, "The Cloud;" then ask the children what clouds do for us and why they are needed. How does the grass look after a shower? What has the rain done to the roads and sidewalks? Why do we feel glad when clouds come up on a hot day in summer?

Tell the story of Niobe, a personification of the clouds, and her lovely children, the mists, slain by the bright darts of Apollo and Diana, the sun and moon. Also the beautiful tale of Father Nile in Egyptian mythology, at the same time tracing the origin of the river back to the clouds and snows of the mountains where it begins. The final thought on this point left with the children should be:

We need clouds to cool the air in summer, and also to give us rain and snow.

Talk with the children of the uses of frost and snow. A crisp cold morning makes our cheeks tingle and our eyes bright; we feel fresh and alert for work and play. What does the frost do to the chestnut-burs? Are the trees and flowers really dead when the frost comes? Bring out the fact that they are only asleep and need the long rest of winter just as we need a night's sleep. In this connection tell them the story of Ceres who must live without her beautiful daughter Proserpina for six months every year, and how she mourns all through the winter until in the spring Proserpina comes back, and flowers spring up again everywhere.

Read Lowell's poem, "The First Snowfall," to the children, and explain how the snow keeps the grass and flower roots from freezing too hard, while the ice on river and lakes keeps the fish alive down below.

Why do we need ice in the summer-time? Is it a good thing to use it in the water we drink? Show that a much better way is to keep our drinking-water cool by keeping it in bottles on the ice. Warn the children against the common practice of eating ice or snow, first because these substances may chill and injure the stomach, but especially because they are seldom pure and clean enough to eat, no matter how spotless they look. Leave with them instead their right uses:

Snow helps to keep the ground warm and the grass and flowers alive during the winter.

In the spring the ice and snow melt to moisten the earth and the roots of the plants.

We need ice in the summer to keep our food cold and to prevent it from spoiling.

SPECIAL PLEADING FOR ALCOHOL.

IN sections of our country visited by yellow fever epidemics large numbers of persons sicken and die, while a few who are equally exposed to the presence and influence of the microbes which are the cause of this disease remain unharmed. But the immunity of these exceptions does not change the character of the yellow fever microbes. The fact that they do not injure the health and destroy the life of the few, simply shows an exceptional physical condition in these immunes which resists the malign and poisonous action of these microbes. But this resistance of the few does not make the yellow fever microbe less deadly in nature or less a danger which humanity should be warned to shun.

Great authorities define a poison as a substance whose nature it is, if absorbed into the blood, to injure health and to destroy life, and hence they classify alcohol as a poison.

It is claimed that there are instances of persons who have continually used what is termed a moderate amount of alcohol without apparent injury. But that does not change the character of the alcohol, any more than the exceptions just cited change the nature of the yellow fever microbe.

The testimony of close observation, for long periods of time, of the effects of alcohol continually used as a beverage, on large numbers of people has been so uniform as to cause it to be classified as a substance whose nature it is to injure health and to destroy life.

No one denies seeming exceptions, but such only show an extraordinary physical condition which may for a time resist the effect of alcohol. Such exceptions do not change the nature of alcohol nor its power to do harm. To claim that they do is to confound the nature of a substance with its unusual effects, which is an error.

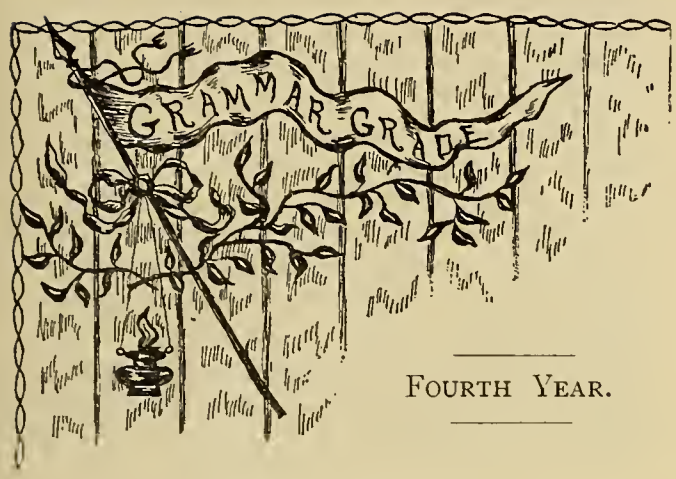
The nature of alcohol, that is, its inherent qualities remain the same. The possibility, in any case, of escaping from the utmost harm to the human organism which may follow the use of alcohol as a beverage depends upon conditions which involve heredity and which are so variable in the same individual that no positive result can in any case be predetermined.

The effect of alcohol in small doses is ordinarily that of a slow poison; its effects in the case of the apparent alcohol immune are usually seen in the limitations of his descendants.

To call the yellow fever microbe "sometimes" a deadly micro-organism would be absurd. Equally absurd is it to urge, as is now being done in some circles, that we should teach that "alcohol is sometimes a poison." Its nature is always that of a poison, although some people may be able for a time to resist its poisonous action. No one can tell in advance who may be an exception to its usual effects, or when such exception would cease. Therefore, to teach that "alcohol is sometimes a poison" would be special pleading for a substance which has brought untold ruin to the human family.

No one that we have ever heard of, and no text-book that we have ever seen teaches that any poison, including alcohol, might not be taken in such infinitesimal amounts as to be followed by no appreciable effects, but this fact would not change the inherent qualities of the substance so taken.

Dr. Koppe, of Germany, in his book for physicians, "Das Alcoholsichtum," says: "The chemical nature of a substance can not change with the quantity and can not be lost in the smallest quantity; but must in every qualitative analysis remain the same, so long as by progressive provisions this substance as such still exists, even down to the last molecule."



THE HEART.

THE extension of kindergarten methods into the early years of primary work, as well as the introduction of manual training into many of the grammar grades, is doing much nowadays to acquaint children with the value of tools and the care they need. A boy thus brought up is not likely to leave valuable machinery exposed to rain and snow, and the girl thus trained will seldom lapse into untidy ways.

Along with this care of working implements should come knowledge of the human body, the most wonderful of all machinery, the most intricate in design, the most susceptible to care or neglect.

If a child is rightly taught he will consider it a far more serious thing to weaken his digestive organs by improper food than to dull his axe or plane by careless usage. Care of the body can come only through knowledge and training, and it is important that this should be given before neglect and abuse have done their work.

Children should be taught the functions of the different organs in the body, on broad general lines at first, and in later years with more attention to detail. Directly consequent upon function are the requirements of each organ in food, work, play, sunshine and rest, and these, too, every pupil of school age should be familiar with. It is a short-sighted policy which would teach a child the most scrupulous care of tools and machines and then permit him to weaken his digestive organs by lunching on layer cake and pickles. Such neglect becomes far more serious, however, when boys and girls are allowed to weaken both mind and body by the habitual use of even light liquors, without protest and without careful instruction as to their harmful effects.

We need to teach more rather than less of care and orderliness and method in schoolroom and home and workshop, but a more imperative duty is laid upon every teacher to acquaint her pupils with the needs of the bodily machine which can not be too carefully dealt with, and which, when once neglected, may never again be restored to its former usefulness.

THE WORK OF THE HEART.

Some idea of the work done every day by the heart can be had by comparison. Let the lesson begin with a discussion of strength, either in people or things, as known by the class. Call for the names of some of the strongest persons they have known or heard of from Samson down to modern times, then for an account of the greatest feats of strength they have ever seen. What animals are the most powerful? What materials are used for building purposes because of their strength and ability to support great weight?

Call special attention to the immense force put forth by plants in growing. No doubt many in the class have seen rocks split by trees and vines, or know of other interesting facts of a similar nature. Tell them of the famous squash which lifted five thousand pounds as it grew, and might have supported even more had not the iron cable which fastened the weight to it snapped before the experiment ended.

Find which pupils have seen buildings or bridges constructed in which immense blocks of stone are used. Ask them to describe how these were raised and put into place.

Can water flow up hill? How is it carried to the top stories of the highest buildings? How is water obtained from deep wells and springs?

Now turn to the human body. What fluid is constantly flowing through it? How is it that the blood in our feet can rise to the other parts of the body? What force sends it to the very tips of our fingers and toes?

Bring a force-pump or a common syringe into class, and with the aid also of diagrams on the blackboard illustrate fully how the heart does its work. Call attention to the great force which must be exerted for this purpose. If six ounces of blood are forced out of each of the two lower chambers of the heart by every beat how great a weight will the heart have lifted in twenty-four hours, allowing seventy beats to the minute? Suppose this blood is sent out of the heart with force enough at every beat to lift it six feet high, what height would be the equivalent of this for a whole day's work.

Problems of this kind will show the class that the heart is really the strongest engine in the world, and its strength is all the more wonderful as, except for the brief rest between the beats, it never stops during a person's lifetime, repairing itself as it goes along.

PLAN OF THE HEART.

A model made of cloth and so arranged as to show the valves and chambers of the heart, will be of great help in teaching the plan of

this organ. Or the heart of a sheep or even of a chicken may be used. Such specimens, however, should be very carefully prepared beforehand, and all traces of blood or other unsightliness which might offend the delicate sensibilities of any one in the class should be removed.

Ask all to examine carefully the specimen used and see how much can be discovered in this way. How is the heart attached to the body and held in place? Notice the strong walls of muscle of which the heart is made. Why are they needed? Call attention to the size and shape of the heart; its different cavities. What is the use of each? How is the blood prevented from flowing backward? Illustrate the valve principle by reference to doors which will open only one way. Point out the veins and arteries leaving and entering the heart. With which of the heart's cavities is each connected? Where does the blood in each go?

After thorough text-book study by the pupils, have them trace from the drawings on the board the course of the blood as it leaves the heart through the left lower chamber, or ventricle, to go to every part of the body, and also as it leaves through the right ventricle for the lungs, where it gets rid of some of its impurities and takes in a fresh supply of oxygen. Ask them to find where the blood comes from which pours into each of the two upper chambers, or auricles. Minute details need not be gone into with this grade of pupils, but they should get a good idea of the general plan and arrangement of the heart, its different chambers and valves, and of the largest arteries and veins leading from and to it, as well as some notion of what each has to do.

Hold the cloth model against your chest showing its correct position and location with regard to other parts of the body, especially the lungs. Have the pupils sketch the heart on paper or the blackboard showing the same. Ask each to place his hand over the tip of his heart and feel it beat. Where else in the body can the beat or pulse of the blood be felt? Why in the wrists and at the temples?

GROWTH AND REPAIR OF THE HEART.

If your pupils live near a railway station have them notice how the trainmen take care of the engine, cleaning and oiling it after each trip, and examining every part to make sure that nothing is out of order. How should machinery of all kinds be treated? How is the heart like an engine? How is it different? Which needs the greater care? How can we take care of the heart?

Find out who in the class has a valuable horse or other live stock at home? How are such animals fed and sheltered and exercised? Are they allowed to eat at any time and as much as they might wish? to stand in draughts after they have been exercising? to live in poorly ventilated quarters? to wear a harness that is tight or ill-fitting?

Take up each of these points with respect to people and especially in regard to care of the heart. Why is food of the right kind and amount necessary? How does it get to the heart. Why does every one need plenty of pure air to breathe? How does the lack of it affect the heart? Where is the best place to get it?

Questions like the foregoing may be given to guide the class in their text-book study, or may be used afterward in connection with review work at the discretion of the teacher.

Refer again to the diagrams showing the relative position of the heart and other organs of the chest. How much room is there between them? What would be the effect on their growth of wearing bands or clothing tight enough to squeeze them into a smaller compass? How would such clothing hinder their work? Why is it so important for the heart to have a chance to beat freely and easily?

THE EFFECTS OF ALCOHOL AND TOBACCO ON THE HEART.

Ask each pupil to place his hand on his heart and count the number of times it beats in a minute. What other machine works so constantly? When does the heart stop beating? How does it get the rest it needs?

At this point take up the effects of narcotics upon the heart as found in the text-books used. Explain the use of the two sets of nerves which control the heart, one set which quickens its beat and the other which holds it in check, also how the two working together keep it beating just fast enough. Illustrate by the balance wheel of a watch, by the brakes used in an elevator, on a train or electric car, by the cords on which windows are hung to make them open or shut as we wish. What would be the result in each of these cases if the brakes were to get out of order or stop working. Which set of nerves controlling the heart's action is first affected by alcoholic liquors or by the use of tobacco? What happens to the heart in consequence? Is it safe to put such an extra strain on it?

Review what has already been learned of the structure of the heart. Show the heart of a sheep or a cow after it has been cooked. Cut it into pieces; have the class feel of it and notice how firm and strong it is, how well fitted for the hard work it has to do.

Have them find from their physiologies how alcohol can change this strong muscle. Could a fatty heart do as much work as a muscular heart? What might happen to a fatty heart if it were over-strained at any time?

Ask the class to place their hands again on their hearts and notice the steadiness of the

beat. How does this differ from the heart-beats of the man or boy who uses tobacco habitually? Would a watch that did not tick steadily or regularly be of much value? Is it any better to have a weak or unsteady heart? Is it safe?

AUTHORITATIVE QUOTATIONS.

ALCOHOL INJURES THE STRUCTURE OF THE HEART.

The heart from continued over-action becomes dilated, and its valves are relaxed. The membranous structures which envelop the organ are thickened, rendered cartilaginous, and occasionally calcareous. The valves, which consist of folds of membrane, lose their suppleness, and valvular disease has come to stay. These derangements are likely to cause death from sudden failure of the heart itself. There is always danger of the heart failing to do its work, for alcohol has made it inefficient.—G. H. McMichael, M. D.

"I know now how Jesus could liken the Kingdom of God to a child."

ALCOHOL CHANGES MUSCLE TO FAT.

One result of the slow, long-continued influence of alcohol in retarding the oxidation of the carbonaceous matter of the system, and allowing it to accumulate in the form of inert fat, is fatty degeneration of the heart. Its muscle fibers are generally invaded with fat granules, which increase in number and size, until eventually every trace of muscular fiber disappears and its place is occupied by fat molecules and oil drops. The heart becomes weak and flabby; its cavities become dilated and its valves incompetent; its action becomes more and more feeble; the vessels are under-filled; the slightest exertion brings on shortness of breath, palpitation and faintness.—[Medical Pioneer.

ALCOHOL CAUSES THE HEART TO OVERWORK.

Alcohol injures both the structure and functions of the various organs of the body. The heart is subjected to change of structure from alcohol, and we need not wonder at this when we recall the strain to which it is put by this agent, the excess of work it has to perform. Four ounces of alcohol increase it one-eighth part, six ounces one-sixth part and eight ounces one-fourth part. Again, the muscular structure of the heart fails owing to degenerative changes in its tissue. The elements of the muscular fiber are replaced by fatty cells; and the power of contraction is greatly reduced.—J. S. Greer, M. D.

ALCOHOL WEAKENS NERVE CONTROL OF THE HEART.

The loss of nerve control over the heart due to the narcotising influence of alcohol allows its reserve energy to be very largely drawn upon, and hence after the quickened beat due to alcohol there is invariably exhaustion. Consequently the net result of its use is not good, but evil.—Walter N. Edwards, M.D., F.C.S.

ALCOHOL EXHAUSTS THE HEART.

The action of spirits on the heart in a number of experiments yielded startling results. The number of beats was increased, usually running up eight or ten a minute, but always dropping down below the normal level. If at eighty in health, the alcoholic impulse would send it up to ninety in the first hour, but the next hour it would drop to seventy, usually going below the health level as far as it went above.—T. D. Crothers, M.D.

ALCOHOL LESSENS WORKING ABILITY.

Alcohol never gives strength, but exhausts and tires the muscles and the heart. Hence it is that men who have to undergo great muscular fatigue, such as soldiers on the march, can do much more work if they leave off drinking alcoholic fluids. The heart is spurred on to do more work (by the use of alcoholics), but this does not, like active exercise, increase the appetite.—C. R. Drysdale, M.D.

ALCOHOL NOT A TRUE STIMULANT.

If the heart under certain conditions, and not always, begins to beat more vigorously

under the influence of alcoholic drinks, this results partly from the paralytic dilation of the blood-vessels, and partly from the momentary irritation of the mucous membrane of the stomach, leading by reflex action, to an exaggeration of the heart's action. But in all this there are no real effects of stimulation due to the alcohol itself.—E. DESTRÉE, M.D.

ALCOHOL ACTS AS A DEPRESSANT.

Alcohol not only fails in giving power in the work of the muscles of the heart, but acts distinctly as a depressant.—EDWARD L. FOX, M. D.

The opinion that alcohol stimulates or strengthens the heart when given in small doses rests entirely on the fact that it increases the frequency of the heart's beat. But this is the result of the paralyzing influence of the alcohol on the inhibitor nerves of the heart earlier than on the accelerators, just as it paralyzes first man's highest mental faculty, his self-control. The more frequent the heart's action above the normal standard, the less efficiently does it promote the circulation and strength of the living system.—[Journal American Medical Association.

ALCOHOL PARALYZES CONTROLLING NERVES OF THE HEART.

Alcohol paralyzes the vaso-constrictors, and so dilates the small vessels and lessens the resistance of the heart's action; but at the same time it lessens the activity of the nerve-centers which control the heart, diminishes the power of the heart muscle, and lessens that rhythmical activity of the small vessels whereby the circulation is so efficiently aided at that portion of the blood circuit most remote from the heart. —J. H. KELLOGG, M.D.

From the first moment of its ingestion the effects of alcohol are those of progressive paralysis. The excitation of the heart and the increased pulse are due, not to cardiac ganglia or accelerator nerves, but to inhibition of the restraining vagus nerves. In other words, it is comparable to a runaway horse whose controlling reins have suddenly snapped asunder. This is, in fact, what occurs when the nerves are paralyzed by belladonna and nicotine or when they are divided by a knife.—CAPTAIN P. W. O'GORMAN, D.H.P., Cantab.

TOBACCO AN INJURY TO THE HEART.

The effects of tobacco on heart and lungs are properly emphasized. In our school life no evil so seriously or boldly confronts our efforts to develop character.—A. F. CHASE, Prin. Bucksport Sem.

TOBACCO IMPAIRS FORCE OF HEART.

The use of tobacco not only lessens the efficiency of the respiratory movements and the internal distribution of oxygen, but it exerts a special deleterious influence on the heart, often disturbing the uniformity of its rhythm and impairing its forces, and not infrequently causing sudden death by cardiac paralysis.—[Bulletin American Medical Association.

TOBACCO CAUSES NERVOUSNESS.

After making a study of several hundred boys, running through a period of ten years, I found accompanied with the use of the narcotic were certain disordered physical functions, such as nervous affections and diseases of the heart.—H. H. SEERLEY, Prin. Iowa State Normal School.

TOBACCO POISONS NERVES OF THE HEART.

What is there about tobacco smoke so injurious to the young? Upon the heart there is a functional derangement producing irregularity of action, due to the poisonous effect of the nicotine upon the nerves controlling its action; thus we have palpitation, dyspnea and cardialgia. [Journal of Inebriety.

"Every year," said the professor, "a sheet of water fourteen feet thick is raised to the clouds from the sea." "What time of the year does that happen, professor?" asked the freshman from the interior. "I should think it would be a sight worth going to see."—[Pacific Ensign.

"What bright eyes you have!" said the visitor to five-year-old Tommy. "You must get plenty of sleep." "Yes'm," he answered. "My mamma makes me go to bed every night at eight o'clock." "That's to keep you healthy," said the visitor. "No, it isn't," replied the youngster. "It's so she can mend my clothes."—[Chicago News.

CONSTANT CHRISTMAS.

O never-failing splendor!
O never-silent song!
Still keep the green earth tender,
Still keep the gray earth strong.

Still keep the brave earth dreaming
Of deeds that shall be done,
While children's lives come streaming
Like sunbeams from the sun.

O angels, sweet and splendid,
Throng in our hearts and sing
The wonders which attended
The coming of the King.

Till we, too, boldly pressing
Where once the shepherds trod,
Climb Bethlehem's hill of blessing,
And find the Son of God!

—PHILLIPS BROOKS.

School Physiology Journal

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"O bells of God, ring on, our souls
To grander action stirring;
Till all our days are Christmas days
Of loving and of serving."

GOD'S LAW ADOPTED BY MAN.

SINCE the last issue of the JOURNAL the editor has journeyed in twenty-one states, in two Provinces of Canada, and over as many lines or sections of lines of railroads, going from ocean to ocean over the great northern route and returning over the southern.

In reply to our questions of railroad employers and employees, in every instance we were informed that no man in the employment of these roads was allowed to drink alcoholic liquors, even beer, either on or off duty. The following from a railroad official was what we constantly heard:

"A man in the railroad business must know what he is about. He is questioned as to his habits in advance, if he can not answer to the roll of total abstainers he is not employed; if he is seen going into a saloon he is dismissed."

This is evidence from only one of many sources that the American people are learning the real character of alcohol to be that of a poison that clouds the reason, injures the judgment and impairs human ability for rendering its best service in any worthy calling. The truth about alcohol is out and no report of a committee of fifty, or of a hundred, no unjust accusations, no spread of half-truths in its defense can ever restore the old false notion that alcohol is a food which will help humanity do its work and bear its burdens.

You, teachers, have been powerful instruments in securing these results. The truths concerning alcohol you have taught your classes have been carried home, and from the home reaching out to larger circles are bearing fruits; lessening railroad disasters, making life safer for the traveler, and happier and better for all who have learned that total abstinence from alcoholic drinks is God's law for our humanity.

THE ATWATER EXPERIMENTS INADEQUATE.

JUST as we are going to press, the official report of Professor Atwater's widely advertised experiments with alcohol and a summary of the same, come to our desk.

To the close observer, the contrast is startling between the limited scope and findings of his experiments, as admitted in this summary, and his verbal statements and the deductions from them widely published five months ago.

The real physiological effect of any substance, for instance alcohol, must be considered not upon one function only but in its relation to the whole human system, in order rightly to conclude whether it is a food that will help some function of the body without harming any other, or whether it is a poison whose nature it is so to injure the action of some part of the organism as to endanger the whole.

Professor Atwater's summary of these experiments shows them to have been utterly inadequate as a basis for the conclusions which have been drawn from them.

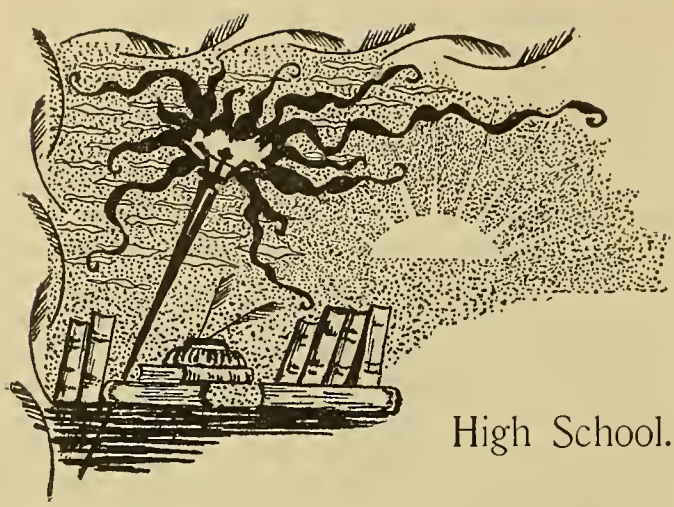
The summary says these experiments were "of limited scope," only "for brief periods of time," that "they do not show the effects of habitual or excessive use of alcohol as a beverage," that "they give no evidence regarding its pathological or toxic action," that "these experiments mark only a single step," that "the physiological action of alcohol involves much besides its nutritive effects," that "its influence upon the circulatory and nervous functions is especially important," and that "these matters are not treated in the experiments."

All this is virtually admitting that his experiments did not furnish sufficiently reliable data for the charge made in June last in his verbal report, that these experiments show that it is an error to teach without qualification that alcohol is a poison and not a food.

Experiments of such limited scope, and for such brief periods of time as to constitute only one step, and that one which gave no evidence regarding the pathological or toxic action of alcohol, and that showed nothing of its influence upon the circulatory and nervous functions, are ridiculously inadequate as evidence to show whether alcohol is a food or a poison.

Professor Atwater's much vaunted experiments have not, on the confession of his summary, proved the instruction of the pulpit, platform, Sunday-school, public school and the indorsed text-books to be inaccurate in teaching, as do the great authorities, that alcohol is a poison and not a food, according to established definitions of the words poison and food.

Concerning Professor Atwater's report itself we shall have more to say later on.



High School.

PRACTICAL QUESTIONS ANSWERED.

THE story comes down to us that among the early dwellers in the Alpine districts the edelweiss was sacred to men of bravest deeds and purest lives. No one else might presume to wear this delicate flower of the heights, and the steep and dangerous way up which one must toil to secure it, typified the rugged path leading to moral uprightness.

There have been many standards of noble manhood and womanhood. Each country has formulated its own and with varying degrees of success has striven for its embodiment in national life. Sparta trained her men to be soldiers, her women to be the wives and mothers of soldiers, and by right of such training she held for years the supremacy over neighboring states. Athens under Pericles and Rome during the reign of Augustus worshiped the intellectual as their ideal, and Plato and Aristotle, Virgil and Cicero are witnesses to the high measure of their success.

The world to-day approves every rational method which seems to promise better health and a more symmetrical mental development. It never tires of devising ways and means by which both may be fostered and carried to greater perfection, but it also places a higher value than ever upon nobility of character. Neither strength, nor wisdom, nor beauty alone, but their union in souls of highest purpose characterizes the man and woman of the present who are worthy, like the Swiss of old, to claim the badge of edelweiss.

There is no place for narcotics in such lives, but instead one finds the strongest arguments against their use. Give these arguments to your class. Study with them the causes which led to the supremacy of Sparta, Athens, Rome, and as many others of the greatest nations of the world as time will allow. In what ways was each strong? in what respects weak? Why did these nations gradually die out? What elements contribute to the life of a nation to-day? How can the life of the individual be made most symmetrical? How can it be harmed? Is there danger in the use of other narcotics besides alcohol and tobacco?

WHAT ARE THE MOST STRIKING EFFECTS WHICH FOLLOW THE HABITUAL USE OF MORPHINE, OPIUM AND KINDRED NARCOTICS?

The morphine taker becomes practically incurable in five years. When he becomes incurable he may abstain but the injured brain and nervous system never recover.—[Journal of Inebriety.

The effect of morphine on the mind, whether for relief of pain or because of natural inclination, is destructive; and no one can become its victim without lowering of moral tone and loss of will power. He may theorize as well as ever, but let a few hours elapse without his accustomed stimulant and his unquiet nerves and uncontrollable longings cause him to jeopardize his soul for the drug, and there is no commandment in the decalogue he would not break to gain mental ease. No matter how honorable, upright and conscientious a man's past life may have been, let him become thoroughly addicted to morphine and I would not believe any statement he might make, either with reference to the drug or any other subject that concerned his habit. This clouds his moral perception in all relations of life. Authorities go even further than this and claim imbecility with organic brain changes.—I. W. Robertson, M. D.

The morphine habit is a slavery which is often even harder to break than the slavery of alcohol. It does not produce crimes and violence but in every other way the victims of morphine are as thoroughly demoralized as the victims of drink. —Dr. Coley.

The majority of habitués first use the drug for the relief of pain, and then find themselves unable to break loose from it.

Early in the use of morphine the effects upon the mind are simply those of pleasant exhilaration, a feeling of perfect contentment. As time advances, however, the duration of these periods is found to become shorter, and it is necessary, in order to obtain the same result, to increase the amount of the drug. It has also to be taken oftener. The hours of freedom from the tyrant become shorter and shorter, the temper is irritable and capricious, pains show themselves in various parts of the body, the nights are long hours of torment.

These victims loathe the drug they once loved. Business is gone, family broken, friends lost, moral sense blunted, mind incapable of healthy action, body wrecked. They will lie, steal, do almost anything to obtain the drug with which and without which they are finally in a veritable hell.—H. H. Kane, M.D.

The toxic agents which influence the race toward degeneracy exert that deterioration in a mode which closely resembles that of the degenerative powers of the acute and chronic contagions and infections. Tobacco is the most common of these toxic agencies, while alcohol and opium contend for second place both as to use and to deleterious effects.

The mental state produced by the opium habit resembles in many respects that of the lunatic, in that the victim of opium is as unable to distinguish between his wishes and the facts, and therefore utters what appears to be sheer lies; hence he is totally unreliable. Opium, like alcohol, causes nervous exhaustion similar to but greater than those of the contagions and infections. From the affinity of opium for nerve tissue, from its action on the bowels and the increased resultant work of the liver, this nervous state is much intensified.—Eugene S. Talbot, M.D.

Opium, a powerful narcotic, is a blackish or brownish gummy substance obtained by evaporating the milky juice of the poppy. Its composition is very complex, one of the principal substances it contains being morphine, usually forming about ten per cent. of its weight.—Roger S. Tracy, M.D.

It is impossible for any one who is acquainted with the subject to doubt that the habitual use of opium is productive of the most pernicious consequences, destroying the healthy action of the digestive organs, weakening the power of the mind as well as of the body, and rendering the individual who indulges in it a worse than useless member of society.—[London Lancet.

While opium is injurious, and in all ways a curse, it is not so rapidly deleterious as chloral and cocaine. Their course is steadily downward until the nervous system is a complete wreck.—L. D. White, M.D.

The prolonged use of chloral begets a debilitated cardiac condition, evidenced by weak, rapid, and irregular pulse, feeble heart sound and tendency to syncope. The red corpuscles are disorganized and a condition created like that observed in scurvy. Chloral acts more disastrously on the brain than opium or alcohol. There is a fretful, irritable temper, aversion to friends and society, deceitfulness, loss of memory, feeble reasoning power, suicidal or homicidal propensity, listless, vacant expression, stupor, loss of self-respect, idiocy, complete insanity.—T. D. Crothers, M.D.

Cocaine is the only drug the effects of which are more dangerous and more slavish than the inhalation of the fumes of opium.—John Morris, M.D.

Among the symptoms due to cocaine poisoning are extreme pallor, profuse perspiration, unconsciousness, frequent, feeble, irregular pulse, dizziness, nausea; more rarely blindness, deafness, muscular rigidity, paralysis, and convulsive or suspended respiration.—W. Schappegrell, M.D.

Every drug capable of producing an artificial exhilaration of spirits, a pleasure which is not the result of the natural play of the vital functions, is necessarily mischievous in its tendencies, and its use is intemperance, whether its name be alcohol, tobacco, opium, cocaine, coca-kola, hashish, Siberian mushroom, caffein, betelnuts, mate, or any other of the score or more enslaving drugs known to pharmacology.—J. H. Kellogg, M.D.

"Unto you is born this day, in the city of David, a Savior, which is Christ the Lord."

THE BUILDING OF A NATION.

The Question of State Sovereignty.

"ABOUT the last of August," (1619) wrote John Rolfe of Virginia, "came in a Dutch man of warre that sold us twenty Negars." Thus was planted in the colonies the institution of negro slavery that at once took root and spread until it became so closely entwined with our social and political life that its destruction seemed to involve that also of national existence. Yet at the close of the Revolution a strong sentiment against slavery existed throughout the colonies, and it was hoped by many in both North and South that its abolition already begun in some of the northern colonies indicated the beginning of the end. Washington wrote to a friend, "I never mean, unless some particular circumstances compel me to do it, to possess another slave by purchase, it being among my first wishes to see some plan adopted by which slavery in this country may be abolished by law." No one had a plan ready, however, and the questions involved were plainly so difficult that for some years the country was content to allow it to drift, waiting, Micawber-like, "for something to turn up." One statesman well expressed the general opinion of the situation when he said, "We have the wolf by the ears, but we can neither safely hold on nor let him go."

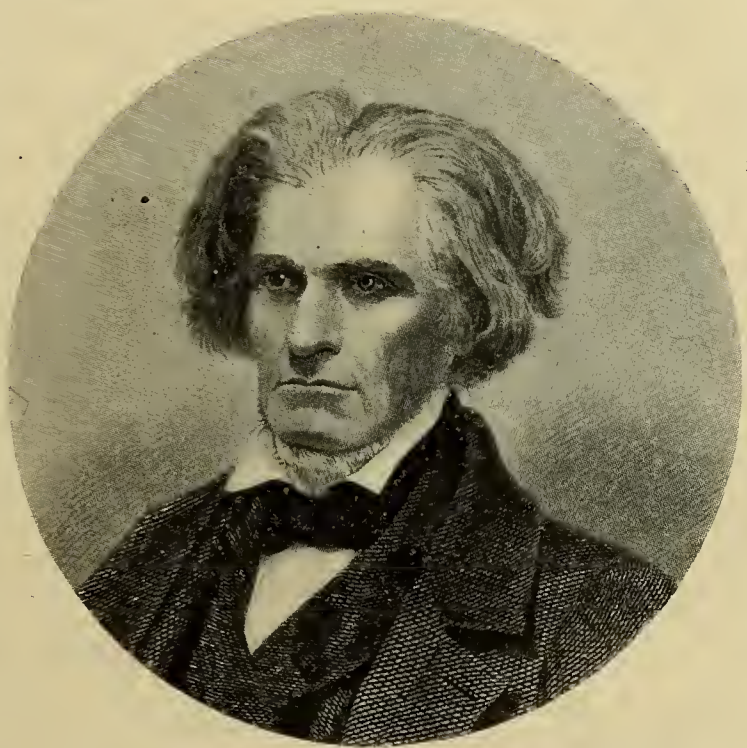
But the great industrial changes that were so soon to give slavery new life could not be foreseen by those who had hoped for its early extinction. The invention of the cotton gin, in 1793, enabled a slave who formerly could clean but five or six pounds of cotton a day, to do easily a thousand pounds. A great increase in its production followed at once. Eight bags of cotton had been seized in Liverpool in 1784, because it was thought that so much could not be the product of America; twenty years later the United States exported more than 38,000,000 pounds.

The demand for cotton brought with it a demand for slaves, for as the South had the soil and climate for the one, it needed the labor of the other, and slavery instead of dying out rapidly increased. Yet it was an expensive institution aside even from the great cost of supporting the slaves, who, having no personal interest in the results of their labor, accomplished far less than an equal number of free workmen. Supplies were wasted, and little attention was paid the proper tilling of the soil, which consequently became less and less fruitful, the owner often being compelled to seek new lands; a fact which explains the efforts of the slave-holding states to have slavery permitted in new territory acquired or opened to settlement by the government.

On account of the character of their labor, the slave-holding states were almost entirely given up to agriculture, and being obliged to purchase elsewhere what they could not produce for themselves, naturally wished to buy at as low prices as possible. The embargo preceding the war of 1812 and the war itself nearly destroyed the commerce of the northeastern states which, compelled to do something, turned their attention to manufacturing and by 1815 were beginning to prosper. But after the war, foreign goods began to come in again, and to save their new interests, these states urged Congress to impose such high duties on imports that Americans might find it cheaper to buy goods of home production. The slave-holding states objected at once. The prices of tobacco and cotton had fallen, a high tariff they foresaw would keep up the price of the manufactured goods which they must purchase. Hence their complaint that they must "sell cheaply and buy dearly" was not unfounded. But protective tariff bills were passed in 1816 and 1824, while a third in 1828, imposing higher duties than either of the others, was so very offensive to the South that it was known as the "tariff of abominations."

It was about this time that John C. Calhoun of South Carolina, one of the famous trio of orators and statesmen in the Senate—Clay, Calhoun, and Webster—came to the front as the champion of the slave-holding states. Mr. Calhoun had favored the tariff bill of 1816. But as he studied the problem, he came to believe that a high tariff would be a constant source of conflict between the slave-holding states and the rest of the Union. The former would always be devoted to agriculture because, as he said, of their "climate, soil, habits and peculiar labor," by which he meant slave labor. Therefore he argued that the Federal government in justice to these states should consider what effect its policy at any time might have on their condition, and that the states themselves should know definitely what means the Constitution gave them for resisting a policy which they felt might injure their interests. Calhoun maintained that, as he understood the Constitution, any state had the right to decide for itself regarding the constitutionality of any law, and that if it should decide such a law to be a violation of the Constitution, it might declare it null and void and refuse to enforce it within state limits. So strong was the hostile feeling in South Carolina, the state which led the opposition to the tariff of 1828, that many feared an attempt might be made there to nullify this bill. No definite action was taken at that time, but the four years following were full of debate over the constitutional questions raised by the nullification doctrine. Daniel Webster made the greatest speech of his life in reply to the arguments for nullification made by Senator Hayne of

South Carolina. President Jackson, from whom the nullifiers had hoped for support, frankly declared his intention to preserve the integrity of the Union in the now famous words, "The Federal Union—it must be preserved." In 1832, a new tariff bill was passed, an improvement in some respects upon the "tariff of abominations" but still not wholly satisfactory to the agricultural states. South Carolina, therefore, "declared it null and void, forbade the collection of duties, and threatened if interfered with to secede from the Union." President Jackson immediately ordered militia to the state to enforce the law, but just then Henry Clay proposed a compromise measure, and a new law was passed by which duties were to be gradually diminished. South Carolina withdrew her objections and the probability of secession was at an end for the time being. But it must not be forgotten that although the tariff was the object of dispute from 1828 to 1832, slavery was the underlying cause, and, therefore, in the later discussion of questions affecting slavery, this same principle of nullification was very naturally applied to any law which seemed directly or indirectly opposed to slaveholding.



John C. Calhoun.

The right of nullification had been claimed twice before; once, after the passage of the Alien and Sedition acts when the legislatures of Virginia and Kentucky had adopted resolutions declaring these acts unconstitutional, and inviting the other states to join with them in the declaration; while it is supposed that an attempt to assert this right was made in 1814 by the people of New England, on account of their commercial losses caused by the war of 1812, and for which they claimed that they were not sufficiently protected by the government. A secret meeting was held at Hartford, Connecticut, but as the war ended successfully before any definite action was taken nothing came of it, nor was the theory of nullification again heard of until revived by South Carolina against the high tariff policy.

The Kentucky resolution merely declared the right of the state to refuse to enforce the Alien and Sedition laws in Kentucky, although inviting the other states to join in the declaration. South Carolina not only claimed the right to nullify, but to have the enforcement of the law in the other states delayed until a vote of all could be taken to decide if the law should be upheld.

Two practical objections to this theory were urged by its opponents. One was the inconvenience of the plan, for however important for the welfare of the entire country it might seem to have a law take effect immediately, its execution could be delayed for months because the objections of some one state would require its constitutionality to be tested by vote of all the rest.

A second objection lay in the fact that in conceding the right of nullification, there could be no supreme power anywhere in the nation. It could not belong to the Federal government, because any state might refuse at any time to accept a law; not to the states, because it would often be impossible for them to agree which laws should or should not be enforced, and the country would be kept in constant confusion over its lawmaking. President Jackson said in his blunt fashion of the theory of nullification and its possible results: "If this thing goes on, our country will be like a bag of meal with both ends open. Pick it up in the middle or endwise and the meal will run out."

There is a well-known story of Cato the elder who became convinced that Rome would not be safe while its rival city, Carthage, remained so powerful and so hostile, and whenever he was called upon for his vote in the Roman Senate, although the subject of debate might have no relation whatever to Carthage, he always ended his response with the words, "Carthage must be destroyed."

Not unlike the persistence of the sturdy old Roman was that of Calhoun, the burden of whose speeches for over twenty years might be briefly summed up in the words, "Slavery must be preserved." Calhoun always insisted, and we may believe with sincerity, that he wished to preserve, not to destroy the Union. He was convinced that the prosperity, security and hap-

piness of the South depended upon retaining slavery, but saw that this system split the country into two sections whose interests would conflict more and more. Therefore, either slavery or the Union must perish, and although he loved the Union, he loved his section with its institutions more, and believed that in guarding the right of states to decide what was best for their own interests, he saw the means of saving both slavery and the Union.

So sensitive was Calhoun to the least opposition that he could predict almost to a certainty, as later events proved, what would be the effect of any proposed law upon this cherished institution. In 1836, he denied the right of Congress even to receive petitions asking for the abolition of slavery in the District of Columbia, because he believed that Congress had no right whatever to exercise authority over slavery, even indirectly. A little later, as the Abolitionists were sending into the southern states large quantities of anti-slavery literature which the slave-holders feared would cause unrest among the slaves and possibly lead to insurrections, Calhoun brought into Congress a bill forbidding postmasters to forward or deliver any mail, the matter of which might be prohibited by the state in which they lived. By this law he hoped that the slave states would be able to control or prevent the distribution of abolitionary literature. As postmasters are officers of the national government, the result of this bill if passed would have been to bring these Federal officers under the control of state laws, and to make the power of the government subordinate to that of the state. The compliance of the government meant the protection of slavery.

In spite of Calhoun's efforts to break the influence of anti-slavery sentiments, they seemed to him to increase with alarming rapidity. To reason these sentiments down was impossible, so long as men have intelligent minds; to force them down, he could but acknowledge was inconsistent with the spirit of liberty, and also impossible, as had been shown by his failure to secure the passage of the postal bill. One hope only remained; to try to break the power of abolitionism by showing the good in slavery. In the past, the friends of slavery had urged its protection because it was so interwoven with the life and prosperity of the south that to destroy it would be to destroy all peace and security; Calhoun now endeavored to show that slavery was a genuine good. The Negroes, he said, were much better off in every way than they would have been in their original African barbarism; the whites were no worse at least for holding slaves, while the relation of master and slave prevented any such conflict between capital and labor as was found where all men were free.

The efforts of Calhoun and his friends to secure the right of slave-holding states to manage slavery as they pleased had been defensive in nature; the effort to prove slavery a positive good marks the beginning of offensive tactics and soon brought on those battles over the extension of slavery into the territories which finally ended in actual clash of arms. We need only to recall the story of the admission of Texas and of the Mexican War, and such measures as the Wilmot Proviso, the Omnibus and the Kansas-Nebraska bills to realize how this question of slavery extension came to be the ever present subject of national thought and legislation.

The outcome as we know was actual secession. No other result was possible for those believing in the sovereign rights of states, of which nullification was an important part. Over this question parties formed, split, and re-formed with new elements each time. There were differences of opinion even among those who approved nullification. Many who honestly thought the states had a right to express thus their disapproval of a law, hesitated about pushing to the extreme limit of secession.

Calhoun has been called the "embodiment of slavery." His devotion to it cost him much. No one can look upon the knitted brows and deep lines of his face without feeling that the intensity of his principles and his anxiety regarding the outcome of the struggle had been wrought into his very being. It was his solemn conviction that he had faithfully done his duty both to the Union and to his section, although he failed to understand, what is so clearly revealed to us of to-day, that to unite slavery and freedom, national union and state supremacy, was a moral and logical impossibility, and it must be admitted that upon the life and work of Calhoun rests the responsibility of so emphasizing the sectional division caused by slavery that a trial of strength in war became inevitable. "By doing more than any other man toward raising the slavocracy to the pinnacle of power, he had actually done more than any other man to hasten the catastrophe and to determine its character."

"I should like a straw with this lemonade," said the lady at the table.

"Hey?" ejaculated the waiter, who was hard of hearing.

"No; straw, I said."

"Nineteen hundred years ago
Came a message sweet and low,
And that song by angels sung
Through the centuries has rung.
Hark! it rises yet again,—
Sweeter, clearer now than then,
'Peace on earth, good will to men.'"

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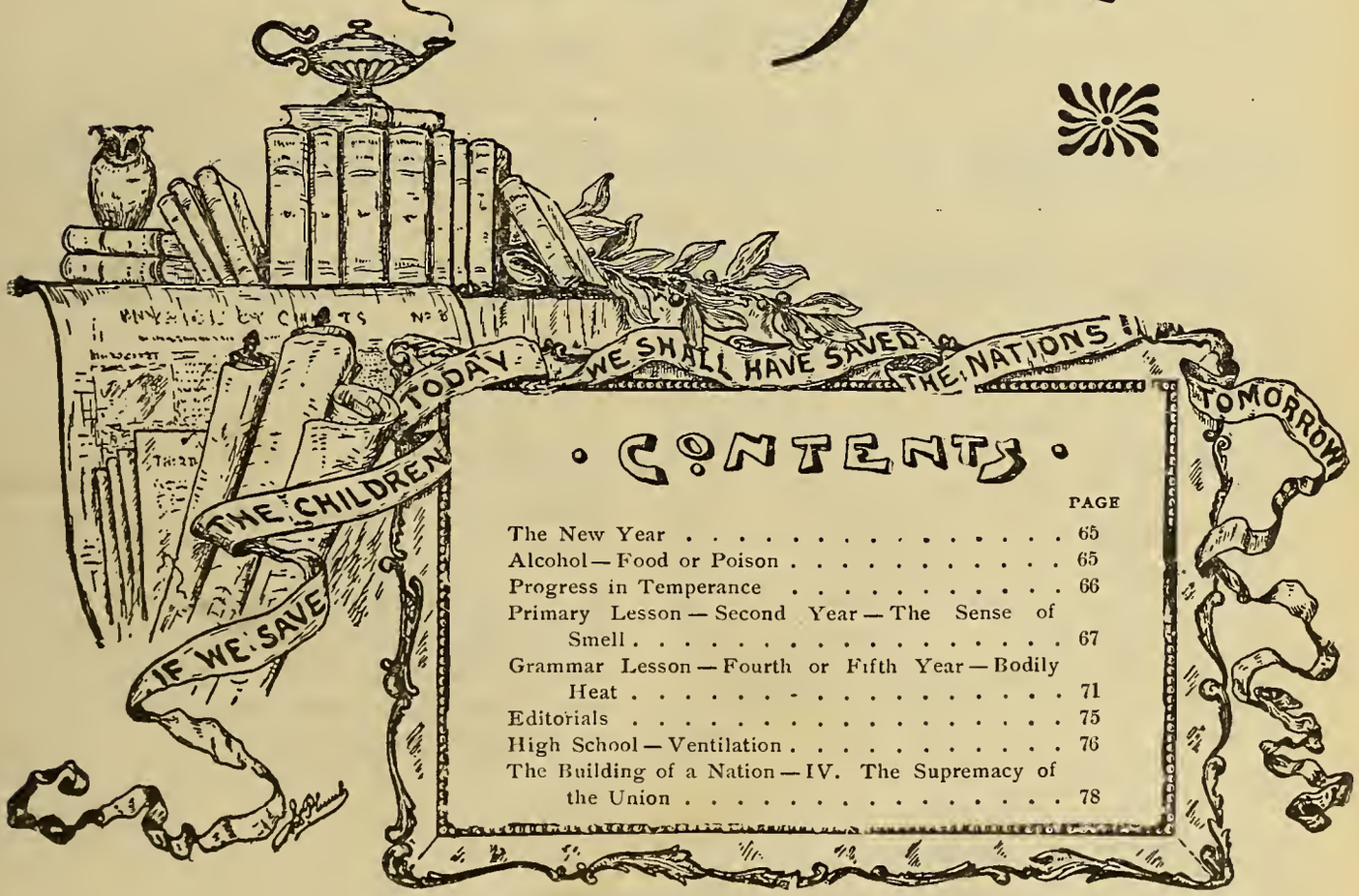

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THE NEW YEAR.

"With ripple of gold on a sunlit sea,
With glitter of silver in clouds on high;
With sparkle of snow on the strong brown tree,
With winds that sing and birds that fly;
With bells that peal by twos, by threes,
Across the mead and down the leas,
The new year comes across the sky.

"With all glad things that smile and beckon,
With all sweet things that live and die;
With all good things that men can reckon,
With all strong things that strength can try;
With hope and love and undreamed graces,
With whispers low and warm embraces,
The new year comes across the sky."

ALCOHOL — FOOD OR POISON?

A FRESH argument has recently been put into the hands of the liquor power by the National Committee of Fifty for the Investigation of the Drink Problem. The brewers and distillers are to-day congratulating themselves over the splendid indorsement given to moderate drinking by the avowed advocates of strict temperance and by those who have made experiments. Much pious talk is indulged in over devotion to the truth; it must be disclosed at all hazards, the Committee of Fifty declare; and some respectable papers assert their willingness to impale themselves upon the weapons of opposing fanatics for the sake of "truth at any price." These good people, unconsciously perhaps, take their stand upon the liquor-dealers' platform in asserting that alcohol is a food, and not a poison.

What is the history of the breaking in of this new light upon the temperance question? A series of experiments has been lately conducted at Wesleyan University under the direction of Professor Atwater. A man is put in an air-tight chamber at different times for from four to twelve days. He is provided with food and drink and takes his exercise upon a stationary bicycle. All that he eats and drinks and excretes is carefully measured and analyzed. Pure alcohol is at times administered, sometimes given in the form of whisky. After minute calculation it was discovered that the alcohol not only did not reduce the system, but when substituted in the place of foods which make energy, it supplied the needs of the body, acting as heat-producing foods act, such as fat, sugar and starch. It was found that alcohol did not form tissue, but yielded energy, and it is insisted that two or three ounces of alcohol a day will do exactly what heat-producing foods will do for the human system. Therefore the contention is that alcohol is food, and not poison. Is this a statement which ought to be given to the world in such an unqualified form as this? I do not believe it. With my whole soul I reject the statement that alcohol is food and not poison, and these are the reasons:

First, because one test of truth is its moral effect. These scientists have utterly ignored this great test. If the worst elements in the community rejoice over it, and the best elements deplore it, the scientist is bound to go over his work and learn where it is deficient. Something is wrong when the liquor men rejoice over such an experiment. Something is wrong when it gives the dissipated young man an opportunity to hurl scientific arguments against his mother's tearful appeals and his father's earnest reasoning. Something is wrong when it brings more money into the coffers of the worst enemy of the home, the church and the state. Something is wrong when such an institution as the saloon profits by the proclamation of a university experiment.

Second, whether alcohol is food or poison must be judged by its sum total effects. We may grant that the man in the cage is not injured by the few ounces of alcohol administered, but we do not bottle our moderate drinkers in air-tight chambers and weigh every ounce they consume; we do not throw about them the restrictions of the scientific experiment. The question is not whether alcohol is a food when under the care of experimenters, but is it a food out in the world of appetite and social treating? Let us judge alcohol by its total effects; are they beneficial or injurious? Let the national drink bill of $1,200,000,000 answer. Let the murders and riots incited by drink answer. Let the prisons and asylums and almshouses and rescue-homes answer. Let starved and freezing orphans and bruised and beaten wives and children answer. Let the long procession of beggars and thieves and tramps and incendiaries answer. Let the youth of wrecked homes and wrecked lives answer. Let violated ballot-boxes and looted treasuries, and the ring-rule of thugs and ward-heelers answer. Let our great cities in the clutch of saloon-made politics answer.

The theologians are twitted about hair-splitting distinctions, but the scientists have outdone us for once. This is the prize quibble of

the day. It reminds one of the small boy's sentence composition on pins, "Pins have saved thousands of lives." The teacher read the composition and asked how pins had saved thousands of lives; and the small boy answered, "By not swallowing them."

Suppose alcohol were a food, its advocates do not contend that it supplies anything to the human system which starch, sugar or fat can not supply. The ordinary foods were found to be just as useful as alcohol in supplying energy. Then why hail this as such a great discovery? In medicine a new discovery means that the new drug can do something which no other drug can do so well. But here is something admittedly dangerous, and no better than what we have upon our tables every day. I might stir my fire with a loaded shotgun, but I should very much prefer to stir it with a poker. This leads to the third point.

Alcohol is a poison because there is something in it that is not in starch, sugar and fat; there is a demon in it which defies the analysis of the physical scientist. You can not weigh and analyze the devil in liquor. There is a curse in it that you find in no food God ever intended for the race. It can not be classed with starch, sugar and fat. Who ever heard of starch making a man brain his family and then hurl himself into eternity with a murderer's blood upon his soul? How many asylums are filled with victims of the sugar habit? How much eating of fat will transform a man from a law-abiding citizen, and a loving father and husband, into a raging brute, flinging away his business, honor, home, life itself for the evil appetite created? No; our foods do not have that effect, and until they do we should refuse to class alcohol with them.

This leads naturally to the fourth reason. Alcohol is not a food merely because it supplies energy to the system. Other poisons will do this; strychnine in limited doses will supply energy, but strychnine is not a food. Arsenic is used in small quantities to build up the system, but arsenic is not a food. Nitro-glycerine stimulates the action of the heart, but it is not a food. They are poisons, and until you take them out of their class and put them in the same category with the foods in daily use, I refuse to pay any such deference to alcohol.

Fifth, Alcohol has not been proved to be beneficial to the whole man. "The Outlook" demands the changing of our text-books upon the demonstration of a physical experiment. Is this a logical position for those who believe that the Kingdom of God is "more than meat and drink?" The physical scientist would fold his arms as though the case were won when the effect upon the body has been demonstrated. A final conclusion is not warranted upon any such narrow grounds. The question now goes to the psychologist to determine the action of alcohol upon the brain; it then goes to the sociologist to determine the effect upon social functions, and last of all it must be submitted to the moralist to determine the action of alcohol upon the conscience, the volitions and the aspirations of man toward higher living. Then a general conclusion can be reached, and only then. We desire no partial premises upon which to base such a tremendously important conclusion as this. We demand more conclusive evidence before we agree to a revision of the temperance teaching in our public schools. The time has not come to mark as obsolete the declaration that strong drink "biteth like a serpent and stingeth like an adder."—Rev. Joseph W. Cochran, Jr., in The Presbyterian.

PROGRESS IN TEMPERANCE.

If the question is asked, whether the cause of temperance has made progress in America during the past half century, in spite of all opposition, but one answer is possible. It has. Attention is called to the following facts:

The geographical area within which prohibition is not only nominal, but actual, has been greatly enlarged, through the operation of local option laws, even in states under the license system.

There is a marked tendency to throw additional restraints and safeguards around the liquor traffic, one of which consists in raising the license fee.

A method of dealing with the question has been found in applying to the saloon the law of nuisance, under which it can be suppressed, in a court of equity, by the use of the writ of injunction.

It is also noticeable that the general course of legislation is in the direction of a firmer control of the traffic by the police and by the courts.

It comparatively rarely happens that amendments to the existing laws are made in the interest of the saloon.

The attitude of the police to the traffic is undergoing an obvious change for the better. There is a general movement for the suppression of dance-halls, where liquor is sold; of concert-saloons, stall-saloons, private wine-rooms, saloon-theaters, gaming in saloons, pretty waiter girls, and all similar practices.

The number of arrests for public intoxication is less than it was, and such arrests tend to diminish it. This is supported by abundant evidence.—Frederick H. Wines, M.D., in The Charities Review.

Primary Lesson.

SECOND YEAR.

THE SENSE OF SMELL.

A SHORT time ago a London firm declared that one of their messenger boys, a lad of thirteen who had never been out of his native city, could cross the Atlantic alone, take letters to New York, Chicago and Philadelphia, deliver them in person and bring back answers to each. The little fellow started without further instructions than the addresses of the letters he carried, did his errand and returned in less time than the mails could bring answers to duplicate letters sent out at the same time.

How to develop such self-reliance as this is a problem with which every teacher wrestles. It is born in some children, it may be cultivated to a great extent in others; it is worth trying for in all. The only avenues by which the child comes in contact with the world about him are his senses. The time will come when we shall no more neglect the cultivation of these intellectual highways than we omit the railroads and telegraphs which bring the remotest farmer into touch with the markets of the world. Every teacher who studies child-life and its modes of growth will see to it that the sense-organs of the children under her care are free from disease, and then that these organs get such training as will tend to their best development. Adapting this general suggestion to the sense of smell, the following lesson for primary children is presented:

VALUE OF THE SENSE OF SMELL.

Show the importance of this sense, when cultivated to the highest degree, by relating stories of animals having a wonderfully acute sense of smell due to training and heredity. A true story of this kind is

HOW ALBERTA WAS FOUND.

Alberta lived in Central New York when that part of the state was being settled. There was so much to see and do that she was never lonely, although no other little girls lived within several miles. Her father had two great dogs, Don and Ned, and these were her constant companions. She could ride on their broad backs in summer, and in winter they would draw her on her little sled.

One day in early spring, when Alberta was four years old, her father and uncle started for the woods to make maple syrup.

"Oh father, can't I go too?" begged Alberta, as they rode out of the big gate on horseback.

"Not this time, dear," said her father. "Some day we will take you and mother both, but we're too busy this time."

Alberta cried a little at first, then she quietly made up her mind to go anyhow. She had never been in the big woods before, but she followed the horses' tracks, and thought she would soon come to the sugar-camp.

By and by the road forked and Alberta did not know which turn to take. She started to the right and walked on and on, but no sugar-camp. Once she thought she heard her father's voice and ran towards it, but no father was there.

It was 9 o'clock at night when the sugar-makers reached home. Alberta's mother met them at the door.

"I'm afraid you have a pretty sleepy little girl," she said. "It's long past her bedtime."

"What do you mean?" said Mr. James in alarm. "Alberta has not been with us; I told her to stay at home."

"Then she is lost," said the frightened mother. "I have not seen her since morning, and I thought you had taken her to the sugar-camp with you."

Lanterns were lighted and the neighbors aroused. "I wish the dogs were here," said Alberta's father, "They would soon find her; but Mr. Weston borrowed them to drive some cows to town, and they'll not be back before midnight."

They scoured the woods and called Alberta at the top of their voices, but no little girl answered. They were still searching when Ned and Don came home.

Alberta's mother showed them a shoe belonging to the little girl and pointed to her tracks in the snow. "Go find her, go find her," she said. The dogs sniffed at the shoe, then started for the woods with their noses close to the ground.

Just before daylight Don came running up to the searchers, barking loudly.

"They've found her," said Mr. James. And sure enough they had. Don led them far into the woods and there, huddled close to an old log, was Alberta, tired, sleepy and almost frozen, with Ned keeping watch over her.

"Did'nt you hear us call or see our lanterns?" asked her father afterwards.

"Yes; but I was afraid it was Indians, so I kept still," said Alberta; "and I thought Don and Ned were bears till they licked my face and barked."

Ask the children how Don and Ned could find Alberta when her father and the neighbors could not. How can dogs follow a fox when they can not see his tracks? Tell stories of the work of St. Bernard dogs in the Alps in rescuing lost travelers. Why do they nearly always succeed in finding them?

What other animals have a keen sense of smell? How does this sense help a cat in catching rats and mice? How do we know that flies and bees can smell? Why do humming-birds go to some flowers and never to others? What animals have the keenest sense of smell? Why can they smell better than we? How can we make this sense more acute in ourselves?

TRAINING OF THE SENSE OF SMELL.

Ask the children to name the different flowers they have seen. Which of these have odors? Bring flowers into class — a rose, lily, violet, daisy, heliotrope — and test the ability of the children to recognize each separately by the sense of smell, then to distinguish the various odors in a bouquet of different flowers.

Find what fruit-trees the children have seen in blossom. Which have the most pleasing odors? What other things besides flowers have odor? What fruits can we recognize by smelling them? Bring into class apples, pears, oranges, grapes and other fruits of marked odor, when each is in season. Have the children smell of them with eyes blindfolded, until each fruit can be named by its odor alone.

What kinds of food can we tell by this sense? How does the sense of smell help us in choosing our food? How can blind people tell what to eat? How can we tell as soon as we enter the kitchen what meats and vegetables are being cooked for dinner, although we may not see them?

How do we know when a person has been smoking? Is it right for us to make ourselves and our clothes disagreeable to others? What odors should we avoid? Why should we keep away from open sewers or leaky gas-pipes? Why should food which has a bad odor never be eaten?

What does the sense of smell tell us about the air in a room? Accustom the children to the fresh, sweet odor of pure air by keeping the schoolroom always well aired. If the facilities for ventilation are poor or insufficient change the air every hour, oftener if necessary, by opening the windows and either giving the children brisk physical exercise to prevent their taking cold, or better still, a short recess outdoors. If always used to pure air and sweet odors they will instinctively notice and avoid those which are harmful or offensive.

"Don and Ned were her constant companions."*

Test the class with different perfumes and spices, being careful not to have these too strong, until each can be distinguished by the sense of smell. Nuts which have a distinctive odor may be used for the same purpose, also sweet-grass, pine-cones, fir and balsam needles, herbs and other aromatic plants, as well as all vegetables in common use.

Proper training of all the senses demands the most favorable surroundings and these are found preëminently in the country. If at all possible, every child should spend at least a part of the year on a farm surrounded by the fresh air and sweet odors of nature. Parks are the best substitute for real country, and these, within reach of nearly all city dwellers, should

* From "Pets and Animals," Springfield, Ohio.

be visited as often as possible by children shut away from the larger privileges of nature. In such surroundings, far better than by any device of the schoolroom, they may be taught to distinguish the odors of flowers and plants alive and growing, and knowledge thus gained will never be lost or forgotten.

THE ORGAN OF SMELL.

Without allowing the children to stare or make personal remarks, ask them to notice the different noses in the schoolroom, and later to tell some of the ways in which they differ from one another. No reference to a deformity will of course be permitted under any circumstances.

After observation ask them where the nose is placed. What is its general shape? Have them draw faces showing either front or side views of the nose, then the nose separately. What parts of the nose can we move? Have the children feel of their own noses to find where there is a foundation of bone. Does the bone extend to the tip of the nose?

Review, from lessons given in the first year, the names and location of the different parts of the nose — bridge, sides, tip, nostrils. What else is the nose used for besides being an organ of smell? Why should we breathe through the nose instead of the mouth? Why is it better to have two nostrils than one? What is the use of the short hairs in the nostrils?

Roland.

Find in what part of the nose the sense of smell is most acute. Can we smell delicate odors better if they are simply held under our nostrils, or if we sniff them into the upper part of the nose? What does this prove about the sense of smell? How much would we have to get along without if we never had had this sense, or if we were to lose it? Ask each child to answer this question, naming what he thinks would be the greatest pleasure lost if he had to do without the sense of smell.

Ask the children to observe the animals they meet and notice how the nose of each differs from that of man. What is the general shape of the noses of animals having the keenest sense of smell? What different shapes do we find in the nostrils of animals?

CARE OF THE SENSE OF SMELL.

The preparatory step in training each of the special senses is to see that they are in a healthy condition and are kept so. The child can never develop an acute sense of smell, nor can he breathe or talk properly, if the nose is constantly stopped up by too abundant secretions or by unnatural growths. If the latter obstruction is suspected, consult a physician. If the child suffers from frequent colds in the head, notice whether he wears enough clothing, and whether his feet are kept warm and dry. Tell the children how to dress, eat, and sleep to keep well and avoid colds. In keeping the schoolroom constantly supplied with pure air, be careful that there are no draughts. Explain the harm which alcoholic drinks and tobacco often cause the sense of smell by dulling this delicate organ and thus preventing the user from enjoying the sweet fragrance of the flowers, from getting the different flavors of the food he eats, and from knowing when the air in the room is bad, or when he is surrounded by other disagreeable odors which he ought to avoid.

Do not forget that the child will understand all such facts of hygiene better, and be far more likely to profit by them, if they are presented in story form, either wholly or in part. Tell them, for instance, the story of

ROLAND'S CURE.

Roland Harte had a cold again. He was only six years old, but he had had colds ever since he could remember. His poor little nose smarted and ached and the tears kept coming into his eyes so he couldn't see the lesson Miss Blake was putting on the blackboard. Altogether he felt as miserable as a little boy could well be.

"Wait a minute, Roland," said Miss Blake as school was dismissed, "I want to see you."

It was easy to tell Miss Blake about his troubles when he was cuddled up in her lap, and it wasn't long before she knew the whole story. When she found he had no mother and that his father was away at work all day, leaving only the housekeeper to look after the little fellow, she wrote a note to Mr. Harte, asking him to let Roland visit her for a time.

He had a hot bath that night, just before he went to bed, and a glass of hot lemonade when he was tucked up in the sheets and soft blankets. Then one window was opened wide and a big screen set up in front of it. Roland was afraid his cold would be worse with so much air all about him, but he was asleep before he knew it, and in the morning he felt almost well.

Miss Blake wrapped a big shawl about him and carried him into a warm room to dress. How nice it all was.

At first he missed the rich pies and cake the housekeeper used to give him, but he liked Miss Blake's soups and eggs and shredded wheat with rich milk so much he soon forgot he had ever had anything else.

"What magic have you used on the boy?" said the housekeeper when Roland came back to her, bright-eyed and rosy with his cold all gone.

"No magic," said Miss Blake, "except right living."

"I wish you would tell me about it, for I want to keep him well now if I can."

Roland never knew what Miss Blake said in reply, but a good many things were different after that. He had ripe apples for dessert instead of mince pie, and not so many sweets. His bedroom windows were open every night and he had a cool sponge bath in the morning. One day his father brought home some new clothes for him. First there was a tiny union suit of soft flannel which reached from his neck to his feet. He had some new woollen stockings and thick, stout shoes, with rubbers to wear when it rained. Best of all, to Roland's thinking, was the natty sailor suit of blue flannel.

By the time summer came Roland could play outdoors as long as any one, and he had not had another cold.

Tell the story until the class can reproduce the main facts orally. Question until they can think of possible reasons why Roland had so many colds. How was he dressed afterward when he no longer had them? Explain why flannel clothing helps to prevent sickness.

What did he eat at Miss Blake's? Before he went to visit her? Explain the need of food which will build up the body and thus keep it healthy.

How did Roland learn that every one must have pure air to breathe? Why did Miss Blake put a screen in front of his open window?

Give the children a chance to ask other questions of their own, until they know all they can understand and put into practice about the care of the sense of smell.

AUTHORITATIVE QUOTATIONS.

REASONS FOR BREATHING THROUGH THE NOSE.

By breathing through the nose the air is warmed and purified before it reaches the lungs. The nostrils act as a sort of a sieve, allowing only pure air to pass beyond their domains. A sudden blast of icy air taken through the mouth and reaching directly the lungs, is often provocative of cold and even pneumonia. —[Omega.

COLDS INJURE THE SENSE OF SMELL.

The sense of smell helps us to guard against noxious gases, which would injure our health. Most of these things that are harmful have a disagreeable odor. The sense of smell is rendered less acute by colds, catarrh and some other diseases, so we should guard against them.—[Journal of Hygiene.

ALCOHOL INJURES THE SENSE-ORGANS.

Without doubt the protoplasmic nerve-cells of the organs of special sense are as sensibly affected by alcohol as the cells of any other tissues of the body. The effect of minute quantities of alcohol on both vegetable and animal cells is a strong argument that it injures the constructive protoplasm, and favors the destructive protoplasm of the organs of special sense. —J. W. Grosvenor, M.D.

ALCOHOL BLUNTS THE SENSE OF SMELL.

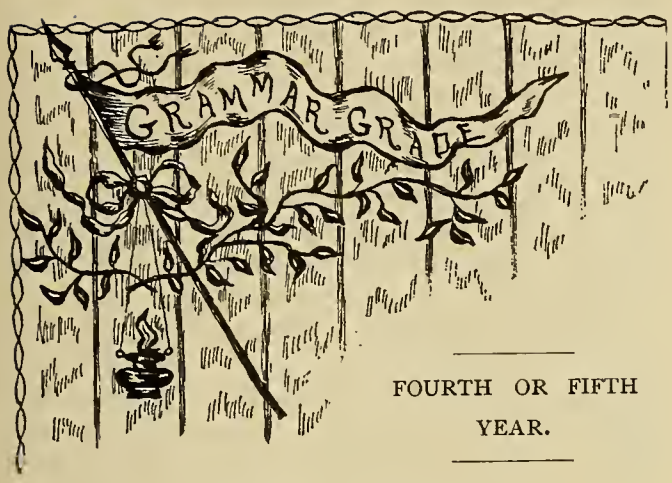
The most marked effect of the use of alcohol is noted on the special senses. Careful observers have noted, before and after the use of alcohol, the condition of the senses, and in all cases a diminution in acuteness and activity was observed. While a man believes that his senses are keener and his powers of endurance greater, careful experiments with instruments of precision have shown that his hearing is reduced, his acuity of vision is lowered, his taste obtunded, his smell blunted, his strength, as shown by the dynamometer, materially reduced, and his eloquence discounted by the listener who has not been imbibing.—A. D. McConachie, M.D.

ALCOHOL PARALYZES THE NERVES OF SMELL.

The use of alcohol and tobacco especially interferes with the sense of smell, often completely destroying it. Alcohol causes congestion and thickening of the mucous membrane of the nose, thus paralyzing, to a certain extent, the nerves of smell. The persistent smoking of tobacco often renders a person almost totally incapable of distinguishing flavors.—W. E. Baldwin, M.D.

SMOKING WEAKENS THE SENSE OF SMELL.

From personal experience, and from actual observation and inquiry, we are convinced that smoking is especially injurious to the nasal fossæ, and that by it the sense of smell is apt to be destroyed.—Edward F. Parker, M.D.



FOURTH OR FIFTH YEAR.

BODILY HEAT.

A STRONGLY fortified castle was once destroyed by a single gun. Day after day its shots rang out, aimed always at the same place in the castle walls, until at last a breach was made large enough to admit the attacking soldiers, and the fortress surrendered.

Work in physical education will succeed as well if it is as wisely directed and as persistent. But we can not afford to give a lesson in hygiene to-day, and to-morrow allow the simplest health rules to be violated. A man's body is well developed only when it yields instant obedience to his mind. To get this power over the physical nature one must know and obey every law of hygiene.

All children have seen or had charge of some valuable possession. If they live on a farm they know how fine stock is cared for and sheltered from storms, and how crops are gathered at precisely the right moment. If they live in the city they see the care and precision with which great public works are constructed. Is it not of greater importance that they be taught to look upon their own bodies as something precious and should learn to take care of them? One can acquire no more valuable knowledge during his school days than that which shows him how to eat, drink, sleep, dress and exercise to develop the finest physique and fit himself to do well the best work of which he may be capable.

SOURCES OF BODILY HEAT.

Take up first the more obvious ways in which the body is kept warm — by the heat of the sun, by fires, clothing and houses.

Ask the class to write a description of a plant kept in a cellar and of another grown in the sunlight. How do the two compare in color, healthy appearance, growth of leaf and branch? Have them decide from this what plants need to make them thrive. Some plants prefer shade to direct sunlight. What would be the effect of total darkness even on such plants? Why do most plants do better if kept in a south window during the winter?

Study with the class the effect of sunshine upon animals and people. Ask them to find and make a list of countries which have the longest nights; the shortest. How do animals belonging to parts of the world in the first list compare with those in the second in numbers, size and protection against the cold?

Have the class compare in the same way people living in the tropics with those living in the polar regions. Why are the inhabitants of the frigid zones so stunted in growth? Why are the tallest, strongest people found in temperate climates rather than in the torrid zone?

Consider next the origin of the different kinds of food used by man, classified as animal, vegetable and mineral. Which of these depend on the sun to keep them alive? What would we have to live on if the sun never shone?

Put the same headings, animal, vegetable and mineral, on the board and have the class write the names of different articles of clothing in the room, under the heading to which each belongs. Thus, the leather of which shoes are made is a part of the animal kingdom; the nails in the heels belong to the mineral kingdom; a cotton or linen handkerchief to the vegetable.

Classify in the same way materials used in building and furnishing houses, from the skins used by savage tribes to the richly carpeted and upholstered apartments of modern civilization. At this point, review all we owe to the heat and light of the sun in aiding growth, and in supplying us with food, clothing and shelter.

Ask the class to describe as far as they can the different ways in which our houses are heated and lighted — by steam, hot-air furnaces, gas, wood or coal fires, oil, electricity. Which of these would we have to do without if the sun never shone? In what ways then are we really dependent on the sun? Help the class to understand that all the sources of heat spoken of thus far are outside the body and can be traced back at last to the sun.

Lead them next to realize that there are also sources of heat in the body itself. Illustrations will help to make clear where this heat comes from.

Ask, for instance, why a working steam engine is warm; how a fire in a stove affects the iron of which the stove is made; why exercise makes us warm. The class will think of similar instances. When several have been given take up the subject of the internal heat of the body and consider where it comes from. Bring a thermometer into the classroom and take the temperature of different pupils when they are feeling warm from exercise, and again when they feel cool. Ask all to find why the body of a healthy person remains always at about the same temperature, whether he feels hot or cold.

Refer again to the stove or steam engine and

ask how a constant supply of heat is kept up in each. What serves as fuel in the case of the body? Have the class find what is meant by oxidation. What examples of oxidation have they seen? Which is burned, or oxidized, more readily, wet wood or dry? Describe the oxidation of wood, showing what is given off and what is left behind. Describe a kind of oxidation in which there is no flame and in which heat is given off so slowly as not to be noticed. Why is a boy careful to keep the spokes of his bicycle free from moisture? What would happen if they were allowed to get wet? Under what conditions does the rusting, or oxidation, of iron and steel take place most readily? Name other instances in which oxidation takes place quicker when the fuel is moist than when it is dry. Which is the case when food is oxidized in the body?

Name substances which give off both heat and light when oxidized. Name others which give off heat alone. In which class does the oxidation of food belong?

MAINTENANCE OF BODILY HEAT.

Tell the class or ask them to read for themselves the myth of Pygmalion, the Greek sculptor, who admired so much the beautiful statue of Galatea which he had made that the gods granted his prayer and changed the marble into a living maiden who became his wife. In what ways do people differ from statues? Where do we get the energy which keeps us alive? What other purpose besides that of furnishing heat is served by the oxidation of coal in a steam engine? What does the oxidation of food do for our bodies besides keeping them warm? Why are we hungry after work or play? Why are we tired? If the body gets heat from food why do we not feel hotter after this has been oxidized in our bodies than before? Explain the constant loss of heat from the surface of the body by showing how quickly hot water is cooled by contact with the air. Ask the class to give two reasons why we feel hotter in summer than in winter. How does the heat we get from the sun in the morning or evening differ from that felt at noon? How does the sun's heat in summer differ from that in winter? Explain the difference. Why do we need more clothing at night? in the winter? Why does the heat of the body keep about the same from day to day?

Ask the class to find from books, from talking with their parents or with physicians, and from their own observation, the kinds of clothing which best protect the body from heat, cold and dampness. How does the outer covering of animals differ according to the climate they live in? With a thermometer take the temperature of different articles of clothing. Are they any warmer than the air they are in? How then can they keep the body warm?

Make a careful study of fuel-foods with the class. What are they? What do they furnish the body? Call for volunteers to write on the board what they had for breakfast or dinner the day before. Help the class to decide whether any article thus mentioned might better have been omitted, and if so, why? What articles if any need to be added?

If more food is taken into the body than can be used at once, in what form is it stored up for future use? What animals sleep most of the time during the winter and take little or no food? What keeps them alive? How do they differ in appearance in the spring and fall?

How does the heat of the sun help to maintain bodily heat? Why do we need sunshine in our houses? in our sleeping rooms? Compare, as to healthfulness, a house in a city block with windows in front only, or one in the country closely surrounded with shade trees, with another which has wide, airy spaces on all sides and plenty of windows to admit the sunshine. Which will be damper to live in? In which will there be likely to be less sickness?

Tell the class of the parks recently made in some of the New York slums to take the place of the gloomiest and most unhealthful tenement houses. What is this wise change doing for the health of the people there? How is it changing their moral character? Refer the class to the articles by Jacob A. Riis in current numbers of "The Atlantic," on this work, and read selections from them aloud.

Why does the cellar of a house need to be kept dry and airy? Ask the class to write a description of what they would call a model cellar, and have some of the papers read aloud for criticisms and fuller explanation. Other rooms in the house may be considered in the same way, emphasizing especially the value of sunshine in warming and drying the air, and in purifying it from germs of sickness or decay.

EFFECT OF ALCOHOL UPON BODILY HEAT.

Children, as well as adults, are frequently urged to take alcoholic drinks of some kind to warm them up or to prevent taking cold in winter, and in summer to keep themselves cool and guard against sunstroke. The contradictory nature of such advice which offers the same remedy for exactly opposite conditions should, in itself, arouse suspicion. Put this before the class and ask them to study the matter. Place on the board questions which will show how to take up the subject; for instance, the following:

How is it that alcoholic liquors sometimes make a person feel warmer? Is more heat produced in the body by their use? Is more

heat lost? Is the actual temperature of the body raised or lowered? How does the use of alcohol affect Arctic explorers and all who must endure severe cold? What would be the effect of a very little alcohol in such cases? Why are one's feelings not a safe guide in the matter?

How does the use of alcoholic beverages affect people in the tropics? What have rum and whiskey done for the Negroes of Africa? How do total abstainers compare with moderate drinkers in cases of sunstroke? with those who drink freely? How can the use of alcoholic drinks make a person more liable to sunstroke and less likely to recover from its effects? What organs of the body have been specially injured by the alcohol in such cases?

Judging from effects, what proofs have we that alcoholic beverages neither keep a person warm in winter nor help him to endure the heat better in summer? Have we any proofs that such beverages are ever helpful or are ever needed by well people in either summer or winter? What proofs can be brought forward to show the harm they do?

A Winter Frolic.

AUTHORITATIVE QUOTATIONS.

ALCOHOL DOES NOT WARM THE BODY.

Alcohol acts physiologically just as nitrate of amyl does by producing relaxation, through the vasomotor system, of the organic muscular fiber. The redness and apparent heat after wine are really evidence of a process of cooling, being due to the influx of blood to the surface. — EDGAR R. CARO, M.D.

Alcohol is incapable of warming the body. The drinker feels warm for a short time, but is more apt to catch cold than if he had not taken the alcoholic drink, since the bodily temperature has been slightly lowered by so doing. When more than a very small dose is taken the bodily temperature may be lowered one or two degrees Fahrenheit, and in winter when such persons have to walk home in the cold, they are thus made more amenable to attacks of bronchitis than abstainers. In Arctic climates the use of alcoholic fluids is now strictly forbidden by all experienced travellers.— C. R. DRYSDALE, M.D.

ALCOHOL DOES NOT KEEP OFF THE COLD.

There can not be a greater error than to suppose that spirituous liquors lessen the effects of cold upon the body. On the contrary, they always render the body more liable to be affected and injured by cold. The temporary warmth they produce is always succeeded by chilliness.—[Medical Review.

The erroneous idea that the blood becomes warmer when alcohol is taken depends upon the fact that the blood-vessels in the stomach, and also in the skin, dilate. An increased sensation of warmth is consequently felt by these nerves and, as we are accustomed to estimate the temperature of the entire body from that of the skin, it was necessarily thought that alcohol raised the temperature until this was disproved by means of the thermometer. — PROF. BINZ, in the Medical Pioneer.

ALCOHOL DIMINISHES SENSIBILITY.

A man who takes a glass of whiskey goes out into the cold night air, experiencing a glow of warmth which makes him believe that the spirit he has taken is keeping out the cold. It is really diminishing sensibility and so deadening sensation, probably in the nerve-centers or in the nerves themselves, so that the cold is not felt and precautions are not taken to prevent the loss of heat from the surface of the body. Secondly, the inhibitory action is removed from the blood-vessels which convey the blood to the surface, and these vessels do not react properly under the stimulus of the cold; they remain dilated, allow the passage of large quantities of blood to the rapidly cooling surface, and in this way the whole temperature of the body may be exceedingly rapidly brought down, and chills, colds and all their attendant

evil results only too frequently ensue.—G. Sims Woodhead, M.D.

HOW ALCOHOL LOWERS THE TEMPERATURE.

Normally, when a person is subjected to cold, the vessels of the skin contract and prevent the warm blood in the interior of the body from approaching the surface and then becoming cooled; but when large quantities of alcohol are taken, this mechanism becomes paralyzed, the blood from the interior circulates over the surface, and is cooled down more and more until its temperature becomes so much reduced that the patient is frozen to death.—Lauder Brunton, M.D.

It is a common idea that alcohol produces a warming effect in cold weather. This feeling of warmth depends, in the first place, on the fact that the paralysis of the central nervous system brings an increased blood supply to the surface of the body. Owing, however, to the paralyzing action which alcohol exerts on the vaso-motor system, a dilation of the vessels, especially the cutaneous vessels, occurs, and consequently there is an increased loss of heat. Secondly, the feeling of warmth depends, in all probability, on the blunting of the sensibility of the central organs which are concerned in the sensation of cold.—Gustav Bunge, M.D.

ALCOHOL WEAKENS THE SYSTEM.

Alcohol lessens the power of the system to resist heat or cold, and therefore those who use it are less able to cope with extremes of temperature.—J. H. Kellogg, M.D.

EFFECTS OF ALCOHOL IN SUNSTROKE.

In 140 fatal cases of sunstroke in which a definite history could be obtained, those using alcohol to excess constituted 60%, those using alcohol moderately 30%, and total abstainers 10%.—W. F. R. Phillips, M.D.

Alcohol paralyzes the brain-centers which control the kidneys and liver and stops their action, especially when in combination with a hot sun. The temperate, the abstainer, rarely suffer from sunstroke.—[Journal of Hygiene.

The congestion and vaso-motor paralysis common in all inebriates are both predisposing and exciting causes for the coma from the sun's rays. The breaking up of the heat-regulating centers of the brain by alcohol leaves the body powerless to resist the sun's rays.—[Journal of Inebriety.

The teacher was giving little Tommy a grammar lesson the other day. "An abstract noun," she said, "is the name of something which you can think of, but not touch. Can you give me an example?" Tommy—"A red-hot poker!"—[Educational Independent.

THE NEWCOMER.

Who comes dancing o'er the snow,
His soft little feet all bare and rosy?
Open the door, though the wild winds blow,
Take the child in and make him cosy.
Take him in and hold him dear,
He is the wonderful New Year.

Open your heart, be it sad or gay,
Welcome him there and treat him kindly,
For you must carry him yea or nay,
Carry him with shut eyes so blindly.
Whether he bringeth joy or fear,
Take him. God sends him, this good New Year. —Dinah Mulock Craik.

HIS GRIEVANCE.

The janitor in a neighboring school threw up his job the other day. When asked what was the trouble, he said: "I'm honest, and I won't stand being slurred. If I find a pencil or handkerchief about the school when I'm sweeping I hang or put it up. Every little while the teacher or some one that is too cowardly to face me will give me a slur. Why, a little while ago I saw written on the board, 'Find the least common multiple.' Well, I looked from cellar to garret for that multiple, and I wouldn't know the thing if I should meet it on the street. Last night in big writing on the blackboard it said, 'Find the greatest common divisor.' 'Well,' I says to myself, 'both of them blamed things are lost now, and I'll be accused of swiping 'em, so I'll quit.'"—[Exchange.

"What was the cause," asked the superintendent, "of the Egyptian plague?"

"They didn't boil the water," ventured a little girl in the infant class.—[Boston Journal.

GROWTH OF TOTAL ABSTINENCE.

All countries which contend against intemperance, before coming to regard total abstinence as ideal, pass through a series of well-marked and characteristic stages. At first, they strive for moderation in the use of alcoholic, distilled or fermented drinks. Then, moderation being recognized as insufficient, they try total abstinence from spirituous liquors, but stop at the moderate use of wine and beer. At the same time also they recognize that for drunkards the use of even wine or beer is dangerous, and for that condition they lay down total abstinence as the principle.

Then, before the losses sustained by abstinence when applied merely to distilled beverages, they come to the ground of total abstinence for all. The struggle for the prohibition of alcoholic drinks by legislative means comes to crown the evolution.—[L'Abstinence.

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A DECLARATION.

THE Bremen division of the Anti-Alcohol League is distributing widely a declaration, emanating from medical authorities, the translation of which we think will interest our readers as expressing strictly scientific truth on the subject of alcoholism.

The chief burgomaster of Jena having publicly declared that M. Truper, a school director, should not be taken seriously because he was avowedly opposed to alcoholism, the learned men whose names follow have published the following appeal:

"It is an absolutely scientific fact that alcoholic drinks more than any other factor are injurious to our national life, diminish the physical and intellectual forces of our race, impregnate them with hereditary diseases and lead to degeneracy.

"More than half the inmates of our penitentiaries have been led into crime by alcohol; nearly a fourth of the insane owe their sad fate to alcohol; misery, impoverishment and grossness of manner are due in thousands of cases to this national poison. Alcohol is the certain cause of ten per cent. of mortality among adults. Every year, in Germany, thirteen hundred persons lose their lives through accidents happening as a result of alcoholic excess. Sixteen hundred are driven by alcohol to suicide, and about thirty thousand are annually stricken with delirium tremens or other brain troubles.

"This enormous sum of misery entails upon our people considerable economic loss; the direct expense for alcoholic drinks annually amounts at this time in Germany to about two and one-half million marks, nearly fifty marks per capita for the population. This amount is three times as great as the expense necessitated by the army and the navy. To this, add the innumerable expenses indirectly caused by the ravages of alcohol already cited.

"The abuse of alcoholic drinks has increased in a frightful manner in our century in consequence of mechanical inventions and the increase of prosperity, and is growing daily.

"As a result, it is a duty of the highest importance for all who have at heart the welfare of our people to contend against this evil in a manner as efficacious and as speedy as possible.

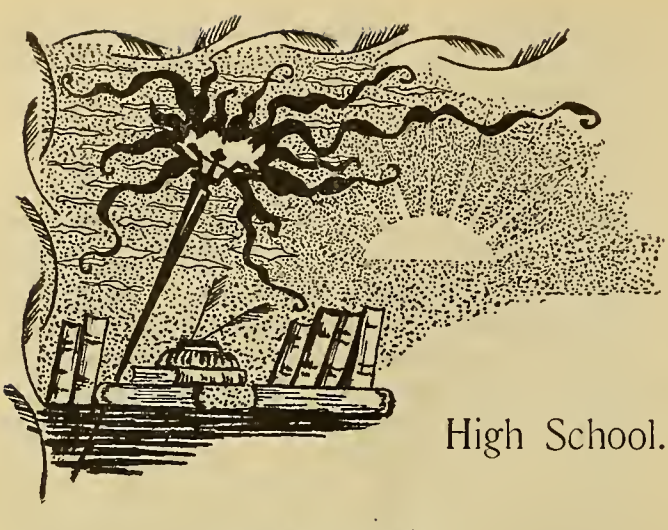
"It has been proved that even a really moderate use of alcoholic drinks is absolutely without value. All the notions yet dominant among certain men, regarding the strengthening, warming or stimulating action of small quantities of alcohol, have not been able to withstand the scientific research which has proved their falsity. Moderation, as it is ordinarily understood, predisposes man in an appreciable manner to certain maladies and shortens life.

"The great danger of the moderate use of alcoholic drinks is that it is a trap for many of our fellow men into which it entices them and pushes them to an immoderate use which was not desired, which was even dreaded. This fact is naturally explained because it is founded upon the special action of the alcoholic poison and upon the peculiar character of the nervous system of man. Even being so optimistic as to admit that the nervous system, in spite of the force of the alcoholic tide in the contrary direction, could transform and ameliorate its condition, the other factor, the treacherous action of alcohol, would remain the same. Thus it is that the moderate use of alcoholic drinks is the true cause of alcoholism.

"It is Utopian, therefore, to hope to stem the evil by exhortations to moderation. History confirms our saying. Ever since alcoholic drinks have existed, moderation has been preached and immoderation dishonored. With what success a glance over our society of to-day will show. The efforts of the advocates of moderation have never in any degree effectively checked alcoholism. On the contrary, the success of the total abstinence movement in many civilized countries is already remarkable. The total abstainers already number ten millions in America, seven millions in Europe. Recently their number has been largely augmented in Germany. This movement is necessary, and as it is founded as much upon material interests as the higher interests of humanity its victory is assured.

"The statement that total abstainers should not be taken seriously is a falsity which is explained only by the most complete ignorance of the history of the total abstinence movement."

Signed: Dr. von Pettenkofer, Professor at Munich; Dr. G. von Bunge, Professor at Bâle; Dr. August Forel, Senior Professor at Zürich; Dr. E. Bleuler, Professor at Zurich; Dr. Alb. Kahaim, Professor at Lausanne; Dr. von Speyr, Professor, Director of Insane Asylum of Waldau; Dr. A. Delbruck, Director of Insane Asylum of Bremen; Dr. A. Fick, Professor at Würzburg; Dr. P. J. Möbius, Instructor at Leipsic.—[L'Abstinence.



High School.

VENTILATION.

ONE of Governor Roosevelt's cardinal beliefs is that bad men pure and simple never have won and never will win any victory in American life by themselves. They win their victories, and plenty of them, because they can always count on the support of excellent people who mean well but who do not know or do not care.

The same principle holds in matters of sanitation. It is not because contractors deliberately plan to rob the public of fresh air that we have poorly ventilated schoolhouses and railway carriages, but because it is easier and cheaper to stick to old ideas and nobody is interested enough to bring about a change.

"There is nothing an American can not do," says an enthusiastic critic, "except rest." Certainly there is little which our live young people will not attempt when once their interest is aroused. We have but to show what needs doing, and ten to one they will devise some plan for doing it.

Utilize this zeal of your pupils for practical ends. It is there and must be expended in some way. If you do not know in what direction their interests lie, plan a general exercise to draw them out. Ask each one to make a note of everything he sees during the day which ought to be done but is not, or of every piece of work which, in his opinion, might be better done than it is now. Have them bring their report to class next day for general discussion. Insist, however, that all criticisms shall be accompanied by definite recommendations for improvement.

From the subjects thus brought up, select for subsequent lessons those which appeal strongly to all the class and study them as thoroughly as possible along these same lines.

Suppose ventilation, for instance, is the first subject chosen. Take it up under two main heads, in the body, and outside the body. Under the first topic, suggest that the class study the need of ventilation, in removing waste matters from the blood and in supplying the body with oxygen; the organs of ventilation, their position in the body, their structure, the special function of each and the care they need; the process of ventilation, including inspiration and expiration; the requirements for ventilation, in dress, exercise and pure air; and the hindrances to ventilation found in tight clothing, lack of exercise, bad air, and the use of alcoholic beverages and tobacco.

Under the second topic, have them consider the ventilation of houses, public buildings, street-cars, railway carriages and other places indoors where people are shut up together. They should study the need of ventilation in such places, to get rid of poisonous gases and disease germs given off by people's breath, by the cooking of food, and by the burning of gas and coal, and to bring in a constant supply of fresh air; the requirements for ventilation, in supplying enough pure air for every one and in making good that used up in other ways, in providing warm air in winter aud cool air in summer, and in guarding against draughts; the means of ventilation already in use in such places as they are familiar with — open fires, doors, windows and patent ventilators of various kinds; the advantages and disadvantages of each, and the changes and improvements they would suggest in each case.

Have them study the ventilating system in use in their own schoolroom, in the churches and halls of the town, in the street-cars and other public conveyances they are familiar with. Which of all these places are well ventilated when filled with people? Which are cold and draughty? How could the ventilating system of each be improved?

Even fewer suggestions than the foregoing will be enough in many cases to start wide-awake high school pupils upon a round of observation and thought which will often result in original devices and invention, and which will certainly broaden their ideas, rendering them intolerant of abuses which older and more conservative people bear in silence.

AUTHORITATIVE QUOTATIONS.

Teach the children that cleanliness means health and strength. Teach them that filth and dirt infect the air we breathe, the food we eat and the water we drink, and that it breeds pestilence and transmits disease. Children should be taught not only the truths of the science of hygiene, but also the practical use of the knowledge obtained. The mind and the body should be trained to perform all their functions and live as nature intended.—CHAS. E. WINSLOW, M.D.

The playgrounds should be large and free from dampness; the buildings should be examples of scientific sanitation; the rooms warm

and comfortable, light and airy, free from draughts and poisonous gases, furnishing 200 cubic feet of pure air to each pupil, and everything should be clean and sweet.—[Dietetic and Hygienic Gazette.

By clogging the system with effete matters digestion is impaired, nutrition rendered imperfect, and growth and development retarded. —E. Stuver, M.D., Ph.D.

No room with from forty to sixty pupils can be occupied much over an hour and the air be fit to breathe without dangerous draughts being created; consequently, pupils should have a fifteen-minute, open-air, outdoor recess in the middle of each long session. During this recess the windows should be thrown open, the room thoroughly ventilated, the foul emanations eliminated, and the air vitalized.—[Journal Am. Med. Ass'n.

Cleanliness covers a large part of the field of sanitary labor. Cleanliness that is purity of air; cleanliness that is purity of water; cleanliness in and around the house; cleanliness of person; cleanliness of dress; cleanliness of food and feeling; cleanliness in work; cleanliness of life and conversation; purity of life, temperance, all these are in man's power. The clean man and woman, other things being equal, will be the healthy one.—[Journal of Hygiene.

Observation, in hospitals especially, has proved how germs carried in the air may be absorbed by the lungs, and in this way also produce fever. Direct experiment has also shown me that poison may be absorbed through the unbroken skin. — Robert Barnes, M.D., F.R.C.P.

There is no more powerful disinfectant than hot air, and a report recently made to the British Medical Association, demonstrates what hygienists and sanitarians have long contended for, that sunlight and fresh air prove of more avail in the disinfection of tuberculosis than any other measures, and hot air is but the liberation of stored up sunlight.—Charles H. Shepard, M.D.

Sanitary science teaches that no one has a right to destroy himself and imperil the health and comfort of others.—T. D. Crothers, M.D.

A perfectly healthy individual, placed under favorable conditions as regards food, fresh air, and exercise, is never attacked successfully by the tubercle bacillus, active, vigorous tissue cells being perfectly able to destroy any bacilli that make their way into the lungs, the pharynx or the intestines.—G. Sims Woodhead, M.D.

Amongst the agencies which act powerfully in causing consumption are damp dwellings and workshops, overcrowding, defective ventilation, occupations which involve the inhaling of irritating dust, and alcoholic excess. These should be avoided.—[London Lancet.

"St. Agnes Eve! Ah, bitter chill it was;
The owl for all his feathers was a-cold."

While the aim of hygiene is to render growth more perfect, decay less rapid, life more vigorous, and death more remote, alcohol when introduced into the body is in opposition to this high aim. The effect of the presence of alcohol in the living, growing body, as has been shown experimentally, is to make growth less perfect, and the system less able to resist the forces that make for decay. Alcohol gives no vigor, and work requiring dash or endurance is best done without it. That with the drinkers of alcoholic liquor decay of the tissues is more rapid and death less remote, there is evidence of a very convincing kind. The expectation of life is so much better in the case of the abstainer from all alcoholic liquor than in the case of the non-abstainer, that the former could insure his life on a payment of a much reduced premium. Personal hygiene is therefore pressing the individual forwards and upwards, while the practice of drinking alcohol stands in the way opposing progress. Alcohol is never an ally to personal hygiene, and often the most insidious of foes.—[Medical Pioneer.

"Now, Bobbie," said the teacher in the natural history class, "what is a panther?"

"A man that maketh panth," lisped Bobbie.

THE BUILDING OF A NATION.

IV. THE SUPREMACY OF THE UNION.

WHILE the slavery forces of the South were uniting in defence of their peculiar institution, in the North was slowly rising that tide of public opinion against slavery that finally was to sweep it out of existence.

In the year 1828 two men then little known or esteemed met in Boston. One was Benjamin Lundy who for several years had been travelling up and down the North trying to stir the northern conscience to a sense of the wrongs of the slaves; the other was a young Boston printer, then less than twenty-five years of age, William Lloyd Garrison.

From his boyhood Garrison had been deeply interested in all moral reforms, but his meeting with Lundy brought him a new conviction of the special work to be done for the slave, and from that time on he gave himself heart and soul to the anti-slavery cause.

Men of the age of Washington and Jefferson had looked for the early end of slavery through the gradual decay of the system. That hope had been destroyed by the increase of slavery which followed the invention of the cotton-gin, and in the strenuous years spent in getting the new government into operation little attention had been given by the country as a whole to the slavery question. Practically the only organized effort in behalf of the slave was the Colonization Society which planned to remove the slaves gradually from this country to Hayti and to Africa, there to be organized into free colonies. Hence, through ignorance or indifference or selfish interests the slavery question was treated with silence.

Garrison resolved to change all this, and although unknown and without means he set about stirring up public sentiment. He saw that nothing could be done to alter the situation until the people of the North fully realized the condition of the slaves, and were willing to accept their full responsibility for these conditions without regard to personal interest. With this end in view he, with Lundy, began to publish in Baltimore a very little paper with a very long name, "The Genius of Universal Emancipation," and later, in Boston, he issued for many years under the greatest difficulties the "Liberator," which became well-known and was, at first, despised at the North for its uncompromising anti-slavery sentiments, and hated in the South for its denunciations of the slavery system.

Garrison never flinched in telling the exact and unvarnished truth. To some who found fault with his harsh language he said: "I will be as harsh as truth, and as uncompromising as justice. On this subject I do not wish to think or speak or write with moderation. . . . I am in earnest. I will not equivocate, I will not excuse, I will not retract a single inch, and I will be heard."

A stouter heart than Garrison's even might well have been dismayed before such a task as his. The church was silent regarding slavery; everywhere there was a strong color prejudice against the Negro; while the North in general, anticipating the injury to industrial and commercial interests by continued agitation of the subject, tried to hush the Abolition voices. Above all, the North was desirous of preserving the Union, and in the constant denunciation of slavery by Garrison and his handful of followers it foresaw the bitterness of feeling between North and South that would inevitably result. Yet the cause of Abolition grew. Garrison's seven weeks' imprisonment in a Baltimore jail for exposing a northern ship-owner engaged in the slave trade, brought him friends from those who saw in this imprisonment a violation of the right of freedom of the press. Once his life was only saved from the fury of a Boston mob by confinement in the county jail. Yet every act of persecution brought new helpers. Abolitionist societies were organized by thousands throughout the North, while their literature penetrated to the far South, to the anger and fear of the slave-owners who not only saw in it the eventual destruction of the whole system, but feared its possible influence in inciting slave insurrections of which the slave-owner and his family lived in constant dread.

The Abolitionists were convinced that Congress had no constitutional right to interfere with slavery in the states where it already existed. Hence, recognizing this fact, however much they might deplore it, they strongly advocated the complete abolition of the institution, and demanded that it should be forever put away in the District of Columbia and in the territory which was under the legal control of Congress. Petition after petition to these ends was sent to Congress, and again and again the slave interests tried to have such petitions excluded by what came to be known popularly as "gag laws." At the same time the growth of the institution made its extension into new territory necessary, and the greater the needs the more imperative were the demands made in its behalf. To keep so vital a question out of sight and hearing, while year by year the sectional feeling grew stronger and more bitter, was plainly impossible, and so, in the early forties, when it was proposed to annex Texas because this territory was needed to preserve the balance between slave and free states, the North suddenly arose and declared that there should be no more slave states. Henceforth, the issue between North and South was defined as it had never been before, and many in the North who had been willing to sacrifice principle to the preservation of the Union, now boldly

declared their willingness to sacrifice the Union itself, if need be, to avoid domination by the slave power.

Sooner or later this question was bound to find expression in politics. Both Whigs and Democrats had done their best to prevent slavery from becoming openly a party issue. Each had adherents in both North and South, although the leaning of the Whigs toward freedom and of the Democrats toward slavery could not be disguised. Evasion of the question of slavery cost the Whig party its existence. The Liberty party with its open declaration for the non-extension of slavery first appeared in 1840. It gained votes in 1844, but four years later, when the question of the admission of California as a slave or a free state was to be decided, the Liberty party was merged into another, the Free Soil party, including not only some Abolitionists, but men from both the Whig and Democratic parties who were opposed to the further spread of slavery. The Whig party gradually lost ground and never appeared in an election after 1852. The Democratic party, losing many of its former anti-slavery voters, became more distinctly a southern and pro-slavery party.

William Lloyd Garrison.

This division of parties completed the separation between North and South. The two sections had never been united in their industrial interests; their social systems were radically different, and because of the growing power of slavery, were drifting more and more widely apart.

But as long as the great political parties had adherents in both North and South there could not be entire separation of political interests. The events of the twenty years preceding 1848 had tended to widen the gap between the two sections. With Calhoun on one side, ever pressing the increasing demands of the slavery interests and preferring disunion to their destruction, and with Garrison on the other, ever urging the wrongs of the slaves and preferring disunion to their continuance, it is not strange that by 1850 North and South were openly arrayed against each other in thought and purpose, if not in arms, and that all the events of that last decade before the war were merely skirmishes preceding the final battle. Neither Garrison nor Calhoun could foresee that out of the apparent destruction of a union of states whose common ties were always fragile and threatening to snap, was to rise a new nation in which the states were to be bound together by common allegiance to the national power; but to Garrison is to be credited that larger sense of trust that right must triumph and that in its triumph no truly good thing is lost.

The Omnibus bill of 1850, while it yielded one of the points for which the Abolitionists had always contended, the abolition of slavery in the District of Columbia, by its fugitive slave law stirred the North as never before. "The moral indignation aroused by the law in Massachusetts swept Webster and the Whigs from power, carried Sumner to the senate and crowned Liberty on Beacon Hill. It worked a revolution in Massachusetts, it wrought changes of the greatest magnitude in the Free States."

The soil from which freedom was to rise and which the Abolitionists had so long been making ready with infinite labor, patience and sacrifice at last began to bring forth fruit. Whittier by his poems, Lowell by his ridicule, and above all, Mrs. Stowe by her "Uncle Tom's Cabin," read the wrongs of the slaves into hearts and homes all over the North.

Meanwhile the clash of forces in Congress grew more bitter every day. With the death of Clay, Calhoun and Webster the policy of compromise passed away, and in their places sat such men as Sumner and Seward from the North, staunch, uncompromising, anti-slavery men, and Jefferson Davis from the South, ready to carry nullification to its logical result, secession.

The slave interests, still unsatisfied by their past victories, sought more territory. California they had lost. There still remained the territory which had been closed to them by the Missouri Compromise of 1820. The effort made to destroy the force of the Compromise

by the "Squatter Sovereignty" project is well known. "Many who voted for the Kansas-Nebraska Bill believed this great concession to the slave-holders would at last put a stop to the agitation. Nothing could have been more short-sighted. In point of fact it immediately solidified North and South against each other." The three years' bloody strife in Kansas to determine whether slavery or freedom should predominate, the Dred Scott decision which made slavery possible in every state in the Union, following in quick succession upon the Fugitive Slave Law, brought to the now aroused conscience of the North a vivid sense of the moral wrong and the political danger of a continuance of this institution. To the standard of the old Free Soil party under its new name came a million voters declaring by the emphasis of their ballots that slavery must go no further. Some of the strictest Abolitionists refused to join this party because it did not declare openly for immediate and universal abolition of slavery, but the ultimate outcome was to be the same. A Southern senator once said, "Republicans did not mean to cut down the tree of slavery, but they meant to gird it about and make it die."

The election of Lincoln by the Republican party in 1860 brought the long-dreaded crisis, the secession of several slave states. Lincoln's memorable words clearly explain the situation from his point of view: "A house divided against itself can not stand. I believe this government can not endure permanently half slave and half free. I do not expect the Union to be dissolved; I do not expect the house to fall; but I do expect it will cease to be divided. It will become either one thing or the other. Either the opponents of slavery will arrest the further spread of it and place it where the public mind shall rest in the belief that it is in the course of ultimate extinction, or its advocates will push it forward till it shall become alike lawful in all the states, old as well as new, North as well as South."

To the slave states, knowing that Lincoln was elected by a party pledged to arrest the further spread of slavery, Lincoln's triumphant election could be interpreted to mean but one thing, the restriction of slavery at any cost.

The separation begun by the secession of seven states during the winter following Lincoln's election bade fair to be a peaceful one. Many at the North were disposed to let the seceding states go. Many felt as did Horace Greeley when he said: "If the cotton states shall decide that they can do better out of the Union than in it, we insist on letting them go in peace. The right to secede may be a revolutionary one but it exists nevertheless."

President Lincoln, however, at his inauguration announced his belief that no state or states had a constitutional right to secede, and declared: "To the extent of my ability I shall take care, as the Constitution expressly enjoins upon me, that the laws of the Union be faithfully executed in all the states." No one can tell what would have been the course of events had the South not forced the issue to arms.

But the fall of Sumter brought even the doubtful ones of the North to the side of the Union. It was not the emancipation of the slave nor his retention in servitude that called out to war thousands of the best and bravest from the homes of both North and South. It was a question of state or of national supremacy. How it was decided, we know. Four weary years of civil war settled once for all the right of the nation to the loyal obedience of all the states. Inevitably also came the settlement of that other question which was the primary cause of separation; and in the absence of slavery, which had been the constant source of irritation, the North and South have been able in the interval of years since the war to unite to "form a more perfect Union" than was ever possible under the old conditions.

"Wintry winds are blowing,
Trees are bare,—'tis snowing,
Beneath the drifts the flowers are buried deep,
But in their icy dwelling
Little brooks are telling
That winter is but springtime fast asleep."

CHILDREN AND THEIR STUDIES.

The cramming system and its accompanying evils are characterized as "A National Crime at the Feet of American Parents" by Edward Bok in the January Ladies' Home Journal. "No child under fifteen years of age," he contends, "should be given any home study whatever by his teachers. He should have not more than from one hour to four of schooling each day, the hours increasing with his years. Outside of school hours he should have at least three hours of play. After fifteen the brain has another period of rapid development, with special increase of the higher faculties. Four hours of schooling, then, is not too much, provided the child's physical being is capable of it, and in time an hour of isolated study may be added. But that is enough. Five hours of brain work a day is the most that we should ask of our children, and the child should pass at least two hours a day in the open air. Our boys and girls do not get enough fresh air and sunshine into their bodies and natures. The higher institutions of learning understand the need of physical development for brain growth far better than do our lesser schools and our homes—sad as it is to admit it.

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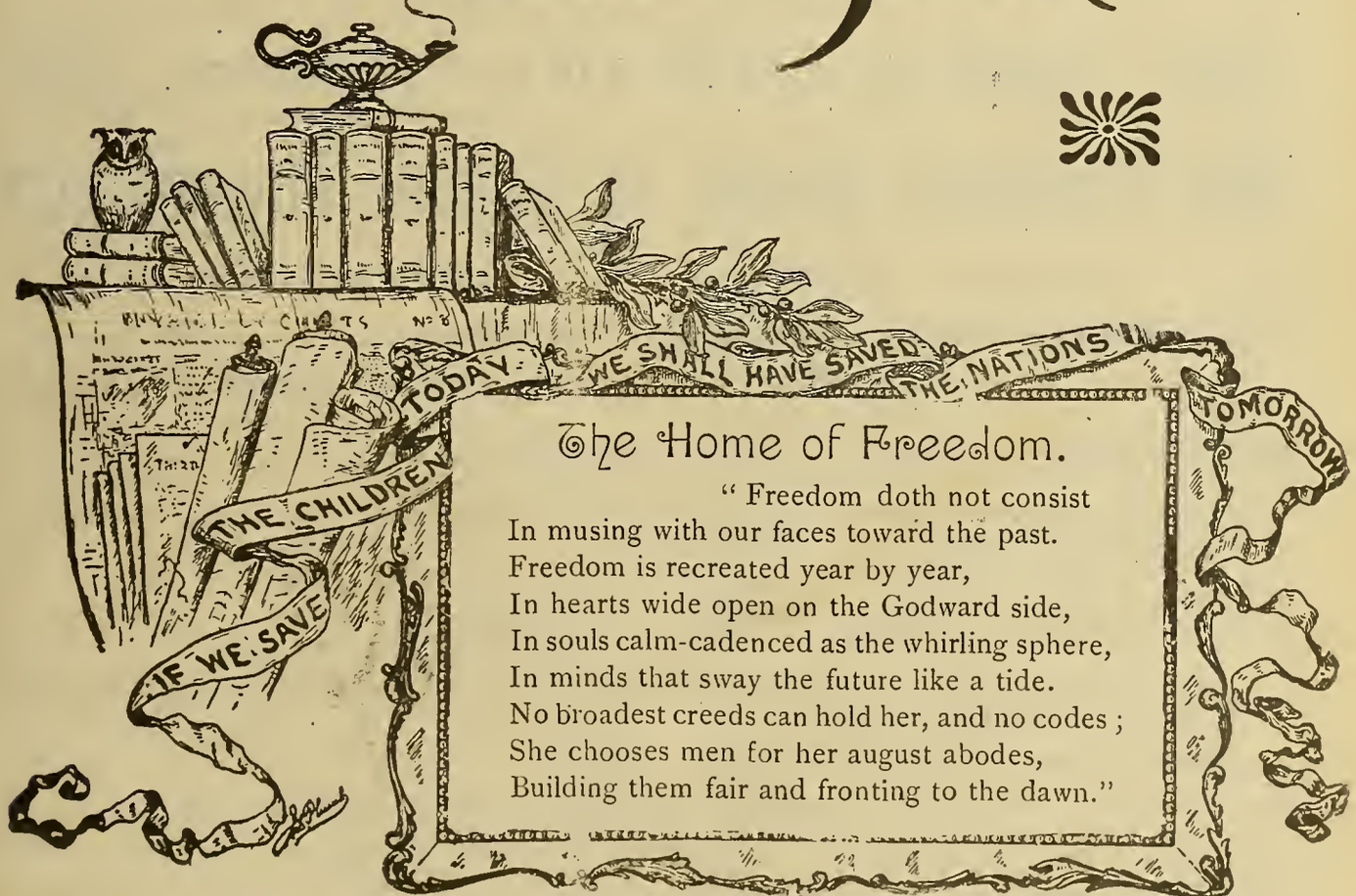

The Home of Freedom.

"Freedom doth not consist
In musing with our faces toward the past.
Freedom is recreated year by year,
In hearts wide open on the Godward side,
In souls calm-cadenced as the whirling sphere,
In minds that sway the future like a tide.
No broadest creeds can hold her, and no codes;
She chooses men for her august abodes,
Building them fair and fronting to the dawn."

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SOWING.

Sow thou thy seed of corn and wait awhile,
See the snow falling and the ice spray gleam
Above its hiding place. Hear the wind scream
And the wild tempest sweep o'er mile and mile
Of sullen landscape. Watch the rain-cloud's vial
Empty above it, and the fitful beam
Of sunlight thwart the field until a seam
Of tender green shoot up to greet thy smile,
And lo! God's miracle is wrought once more
Of life from death — from loss, most wondrous gain;
The cornfield glitters with its golden store
On the same land where late the storm and rain
Beat on the bare, brown earth. Thy sowing o'er,
Thine but to wait and pray lest faith should wane!

Sow thou thy seed of love, O heart, and wait!
Though it lie hidden, though thy doubts and fears
Whisper to thee 'tis lost, and thy sad tears
Fall on the ice-bound soil of bitter fate,
Surely the seed will live; spring sets the gate
Of life wide open. See, though hid for years,
Love seeks the light of love! Its tender spears
Shall gladden thy sad eyes at last, though late,
E'en but the blade perchance and not the bloom.
Ofttimes God seeth that love's flower rare
Hath no perfection this side of the tomb,
But needeth for its growth the purer air
Of his sweet paradise; after earth's gloom
Love hath its blossoming, not here, but there!

— KATE MELLERSH.

THE SIGN OF THE CROSS.

AT the crest of the continent, near the top of a cloud-piercing summit of the Rocky Mountains, is graven by the hand of nature the loftiest of all symbols. Deep ravines which at that great height are always filled with snow intersect in such a way as to make a gigantic white cross cut on the incline of the mountain's side. Its vision of dazzling whiteness bursts upon one as the train sweeps round a curve at the highest elevation over which modern commerce and travel rush along their way on metal rails.

From the beginning through all the centuries this cross has been there, an emblem of dedication, a prophecy of possession of this continent by that civilization of which the cross is a symbol. It was there when the silence of the ages was broken only by the occasional footfall of the man of the stone age. It was there when Columbus sought this continent as a tribute to lay at the foot of the cross of which he dreamed. It was there when the Puritan came with his Bible. It was there on the day when our nation was born, when the old bell rang out its peal proclaiming "liberty throughout the land unto all the inhabitants thereof." It was there when Abraham Lincoln signed the Emancipation Proclamation. It was there, a type of sacrifice and service when suffering Cuba awoke this nation to its destiny as the evangel of liberty to the nations of the earth. It was there when state after state and the National Congress enacted temperance education laws and transferred the gravest of all our national problems, the total abstinence education of coming generations, to the public schools. It is there to-day in all its gleaming purity, an appeal for the freedom of our land and all the inhabitants thereof from the thraldom of alcohol, the worst form of bondage. It has witnessed the progress of liberty through three great national epochs, and as it is a prophecy of the possession of our land for all liberty of which the cross is the emblem, it incites us to unfailing hope and endeavor in the struggle which we face.

That the great liquor interests should object to anything being taught against the character and effects of the beverages on which vast sums of money are made, that they should appeal to and foster every possible form of opposition is to be expected. That such opposition has not been more manifest, more outspoken and more successful is one of the many instances of divine protection which thus far has attended this attempt to instruct coming generations in the whole truth and nothing but the truth regarding alcoholic drinks and other narcotics.

Not an objection to this study has ever been presented that did not fade before the light of truth and reason.

Just now we are hearing again the old argument against the study being taught all pupils in all schools, that "it is a wearisome monotony," the same thing over and over again. But this is never true if the subject is properly graded. When it is, new facts and a larger treatment will continually be presented, creating and holding an increased interest as the pupils pass from grade to grade. If the instruction is of the so-called ethical variety, given orally and semi-occasionally, when the teacher feels like it or thinks the hour propitious for a homily on

the evils of alcohol and tobacco, it can not fail to be often monotonous, for the ability is rare to make such exhortations, many times repeated, always fresh and interesting. Such exhortation is not what the law or the subject calls for. Teaching, not preaching, is required. Without the first, the latter becomes cant. Temperance physiology is a science—the science of hygiene, including the nature and effects of alcoholic drinks and other narcotics, with physiology enough to make all intelligible—and it is the facts of this science which are to be taught as are those of other sciences. No exhortation can equal the power of truth forcefully presented. The ethical side of the question is dependent on the scientific side. Whether alcohol is or is not by nature a healthful beverage, whether its effects as such are or are not good, are questions the answers to which may form the basis for ethical conclusions concerning alcoholic drinks. Science, as revealed by experience and by laboratory methods, must answer these questions before there are any grounds for ethics to rest upon. Until these questions are answered to the pupil's comprehension there is no foundation for ethical instruction. For if alcohol is good as a beverage it is good to drink it. If it is bad then it is bad to drink it.

This leads to the now burning question, what is the truth about alcoholic drinks. The voice of experience has nothing but condemnation for them. Because a little has the power to create an uncontrollable appetite for more, their moderate use has proved the pathway to destruction. Science, which tells the story of the nature of things, for twenty years has labeled them not foods but poisons, and we have so been teaching the children. The Atwater attempt to disprove this has signally failed, as our readers will see from the summary of the "Appeal to Truth" given on page 83 of this Journal.

He who said, "I am the Truth," is watching this struggle for the childhood of this nation. Shall they be the customers of alcohol venders in the future as their parents have been in the past, or shall they be led by truth into the safe paths of abstinence, is the pending issue.

With gratitude we remember the white cross above the Tennessee pass, gleaming to-day in the cold glad light of the winter sun, a promise of the preëmption of this country for the civilization of the Son of Man who said, "And I, if I be lifted up, will draw all men unto me." In the fulfilment of that promise alcohol will meet its doom. MARY H. HUNT.

"What miracle of weird transforming
Is this wild work of frost and light,
This glimpse of glory infinite?"

THE LARGEST LIFE.

There is a beauty at the goal of life,
A beauty growing since the world began,
Through every age and race, through lapse and strife,
Till the great human soul complete her span.
Beneath the waves of storm that lash and burn,
The currents of blind passion that appall,
To listen and keep watch till we discern
The tide of sovereign truth that guides it all;
So to address our spirits to the height,
And so attune them to the valiant whole,
That the great light be clearer for our light,
And the great soul the stronger for our soul:
To have done this is to have lived, though fame
Remember us with no familiar name.

—ARCHIBALD LAMPMAN,
in the Atlantic.

A CHRISTIAN NATION.

What is a Christian nation? Not a nation which has no vices, which has no foes within its own borders, which is perfect; but a nation which is battling against the evil within itself and against the evil without itself, and struggling toward a higher and better ideal of justice, mercy, truth, reverence. It is a nation which is endeavoring to give equal rights and equal justice to all men; it is a nation which has consideration for the poor, the ignorant, the oppressed and the suffering, and which loves mercy as well as it does justice; and it is a nation which shows reverence not merely nor mainly by temples in which its people assemble from time to time to pray and praise, but reverence, because it seeks to ascertain what are God's laws and to incorporate those laws into its own commonwealth, and to conform its national life to those laws, and because in some measure it trusts to the forces which God has set at work in the world for obedience to those laws within its own commonwealth; a nation which in its organic, legal, constitutional action does justice, loves mercy, and walks reverently and humbly. And just in the measure in which it attains this, just in the measure in which it sets this ideal before it and walks toward this, is it a Christian nation. If a Christian is one who serves others, then a Christian nation is one which seeks not its own glory, its own prestige and power, but seeks the welfare of the human race.—LYMAN ABBOTT.

"The torch of freedom God has lit,
Burns upward toward the Infinite,
And through all hindrances it will
And must, and shall, burn upward still."

The way to mend the bad world is to create the right world.—EMERSON.

AN APPEAL TO TRUTH.

A REPLY TO PROFESSOR ATWATER.

THE reading public will remember that last June, Professor W. O. Atwater of Wesleyan University, Middletown, Connecticut, in a talk before a local club gave an account of his experiments as to the nutritive value of alcohol. It is said that contrary to the usual custom of that club a special New York reporter was present. Immediately afterwards, an account of these experiments and conclusions appeared in the newspapers of practically every state in the Union. This was uniformly accompanied with the charge that the pulpit, platform, Sunday-school and public school are in error in teaching that alcohol is a poison and not a food. The attack seemed to be especially aimed at the public school textbooks on physiology. One paper even asserted that it was to prove a statement of these textbooks erroneous that Professor Atwater conducted his experiments.

Five months after this newspaper promulgation, the first official data of Professor Atwater's experiments appeared in Bulletin 69 issued by the United States Department of Agriculture.

The campaign use made of the Middletown experiments led to the formation of a committee from the Northfield Conference of Christian Workers, August 11, 1899, "to meet this most recent attack upon the cause of temperance." National Temperance Committees of great religious denominations, National Temperance Societies and others join the Northfield Committee in presenting to the public a study of the whole subject entitled, "An Appeal to Truth."

This sixteen-page pamphlet answers the three conclusions upon which Professor Atwater based his charge of error. They are in substance:

1. Professor Atwater says his experiments proved that alcohol is oxidized in the body. This is not denied, but it does not prove alcohol to be a food. Many poisons besides alcohol are oxidized in the body.

2. The Middletown experiments are said to prove that alcohol in being oxidized in the body furnishes energy. This again is not denied, but it proves nothing in favor of alcohol because its injurious action at the same time far outweighs the value of the energy it liberates, as is the case with other poisons oxidized in the body.

3. Professor Atwater claims that in his experiments alcohol protected the materials of the body from consumption just as effectively as corresponding amounts of sugar, starch and fat. But this is not supported by his own figures in the tables of his official Bulletin 69. Such is the testimony of professors occupying the chairs of Pathological Chemistry in the University and Bellevue Hospital Medical School, New York City; of Physiology in the Medical School of Northwestern University, Chicago; of Hygiene in the Medico-Chirurgical College of Philadelphia; and of a former professor of Materia Medica in the Medico-Chirurgical College of Philadelphia, now professor in the Philadelphia Polyclinic and College for Graduates.

All of these scientists, after careful study, arrive at the same conclusion, viz., that Professor Atwater's tables in Bulletin 69 do not show the protection he claims, but on the contrary a loss of nitrogenous material when the man experimented upon took alcohol.

In short, the entire testimony presented in this "Appeal to Truth" shows that Professor Atwater's costly experiments have produced no evidence whatever to sustain his charge of error against the present temperance teaching that alcohol is a poison and not a food.

Other experiments of his, announced but not yet published, Professor Atwater says are in substantial accord with those of Bulletin 69. The "Appeal to Truth," says of them:

"If they shall show the same loss of nitrogen when the man took alcohol as do those of Bulletin 69, such unanimity would by so much refute the statement that alcohol protects the material of the body from consumption. If they should vary, that variation would prove such data to be inadequate, for to be worth anything for generalization, there should be uniformity in the results of such a limited number of tests made under conditions so unusual to every-day experience."

Although Professor Atwater may not have claimed quite so much for his experiments as have some of the newspapers, the main points of his utterances which the "Appeal to Truth" shows are untenable are practically the same in all the papers. The official circular 357, sent out with Bulletin 69, says that "much more has been claimed for these experiments than they legitimately cover," but this does not correct the positive newspaper assertions that Professor Atwater has proved alcohol to be as much food as sugar or starch. Neither does his defence against the criticism of the scientists on his New Haven address, December 28, 1899, as published, make any specific correction of this false deduction.

The "Appeal to Truth" to which the widest possible circulation is being given, and which everybody should read, shows where the facts in the case lie. Its conclusions can be disputed by no one who impartially reviews the testimony therein presented.

It can be obtained at cost price, five cents, by addressing "Appeal to Truth," 3 and 5 West 18th Street, New York City, or 23 Trull Street, Boston, Mass.

Primary Lesson.

OBEDIENCE.

LOWELL calls obedience the great tap root of dominion which

> "is not stirred
> Though heaven-tossed tempests spend their utmost skill."

Every country has need of men who have learned how to obey, in order that it may have worthy rulers; but in such a country as our own such men are absolutely indispensable, if our republican institutions are to endure. Fortunately, the raw material, rich in possibilities, is to be found in every schoolroom, and the primary teacher has the first opportunity to shape it for noble ends.

Many children begin their school life entirely untutored. At home they have been allowed to run wild; here they get their first notions of obedience. When they have learned to control themselves and to yield individual preferences for the good of the school, they have mastered the first great lesson in obedience, the foundation of citizenship.

There are two ways of teaching the child to obey. We can compel him to study his lessons, to keep quiet, to submit to every dictum imposed because it is backed by a greater force than his own; or we can, even in his earliest years, awaken in his soul the desire to do right for right's sake, and to yield to authority that he in turn may know how to govern others.

The first exercises of the schoolroom go far towards influencing the child's future course of action. If he finds his teacher tactful, full of resources, able to guide her pupils at every turn, he is quick to respond. He instinctively follows a leader.

Until all shyness and self-consciousness have worn away, make the lessons on any subject general in character, and such that all the children can take part in them together. Drill the class in sitting, standing, walking to and from their seats, marching, taking books from their desk and replacing them, entering and leaving the room quietly and in order. Later on, call upon one at a time to rise, bring you a book, go to any part of the room you may indicate, point to the north, east, west, south, draw a straight line on the blackboard.

Give a few exercises of this kind every day, varying them as they become familiar, until there is no hesitancy in understanding or carrying out any simple direction. The children will now be ready for further knowledge of

WHAT OBEDIENCE IS.

Only now and then do we find a person who entirely disregards authority. Most people intend to fulfil the letter of the law, even while they utterly neglect its spirit and intent. Nothing can be more dangerous than this half-way obedience if carried to its logical outcome. It means connivance with thieves and scoundrels in city politics, and corruption and bribery in legislative halls; it means the continuance of the canteen system in our armies, with its thousands of victims and their ruined homes.

The remedy lies in our giving to the child clear-cut notions of right and wrong, and in teaching him to differentiate sharply between lip-service and loyal obedience of both head and heart.

An illustrative story may be used to explain to the children the difference between obeying the letter of a command and its real meaning. We suggest

A SHOWER IN THE DRAWING-ROOM.

It was raining outside, and Hugh and Grace wanted to play in the puddles in the back yard. It would be such fun. But mamma objected.

"You both have colds," she said, "and you would be sure to get your feet wet and your clothes too. You must wait till the sun shines and it is pleasant before you leave the house."

The two eager little faces grew very sober as mamma left them alone in the drawing-room and went to take her afternoon nap.

Finally a bright thought struck the children. "We can make it rain in here," they said. In a trice Grace was on the floor under mamma's umbrella and Hugh was pouring water from the big carafe all over the top.

What a time they had.

The water ran off the umbrella just like real rain and stood in little puddles on the rug. They dabbled their fingers and toes in it, and Hugh waded through the biggest puddles with his boots on and played he was crossing a deep river.

When mamma came in from her nap both the children were quite as wet as if they had been outdoors, and the beautiful Persian rug was soaked and stained with water.

"We didn't go out in the rain," explained Hugh and Grace in the same breath. "It's been raining in here. That's why everything is all wet."

Show the picture to the class as you tell them this story. While they appreciate the good time these children had, ask questions to bring out what was wrong in their play.

Did Grace and Hugh obey their mother in staying in the house? In getting their feet and clothes wet? Did they obey what she said to them? What she really meant? What is it to obey?

From the different answers obtained to the last question, put into blackboard sentences the thoughts:

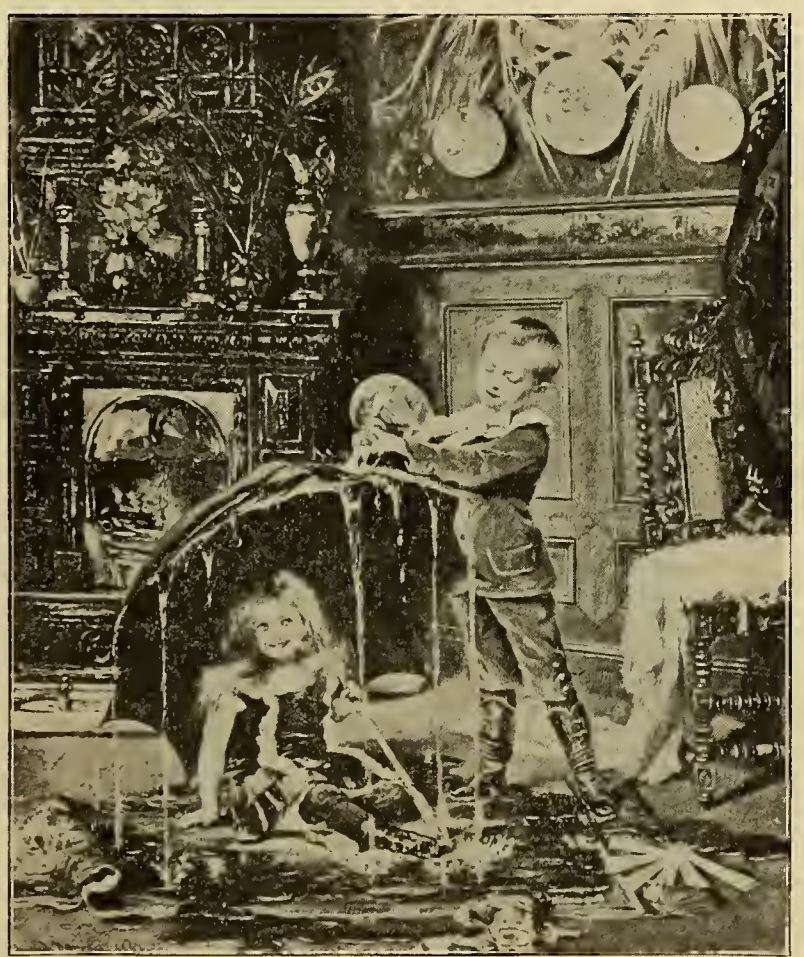
We obey when we do exactly as we are told.

We obey when we do just what is meant as well as what is said to us.

WHY WE NEED TO OBEY.

Make this part of the subject a patriotic exercise. Have ready on the board a drawing of Mt. Vernon, showing also the Potomac River and a ship lying there at anchor.

Find how much the children know already of Washington. Ask one of them to tell the hatchet story. Describe the boy Washington as tall and handsome; able to run faster, throw farther and ride better than any of his playmates. The story often told of his wish to go to sea shows the kind of boy he was.



The Shower in the Drawing-room.

When he was sixteen years old he wanted to be a sailor. His half-brother Laurence was in the army and knew many army officers. Through his help young George Washington had the chance to become a midshipman on a man-of-war. This was just what he had longed for.

At last, the vessel on which he was to leave home sailed up the Potomac and lay at anchor in sight of Mt. Vernon. His trunk was packed and sent on board that night. But when he tried to say good-by to his mother the next morning she burst into tears.

"It will break my heart, George," she said, "to have you go to sea. I can not give my consent."

It did not take George long to decide what he would do. He took his trunk off the ship and told his mother he would stay at home with her.

He had dreamed of becoming a great man at sea, and of commanding his own vessel some day, but he gave up all his plans to obey his mother and please her. He did not know that instead of being a sailor he was to become a great general and our first president, but he did right and the rest followed. If he had not learned to obey and control himself when he was a boy, he would not have been able to command all the American armies and to govern the whole country after he came to be a man.

Show the children all the pictures of Washington you can find. Has he a noble face? What do we like about it? How did he treat his mother? How do we know he was an obedient boy? Was it wrong for him to want to go to sea? Why did he want to go? Would he have done right if he had gone without his mother's consent? In what ways was it better for him to stay at home? Whom do we have to obey? Why must every one learn to obey while he is young?

Get as many answers from the children as possible on this last point, supplementing them if necessary, to bring out the following ideas:

We need to learn to obey in order to learn how to govern ourselves.

We need to learn how to obey in order to know how to govern others.

We need to obey our parents and teachers because they are older and wiser than we.

We must obey all the laws of the country in order to live quietly and peaceably with other people.

WHAT OBEDIENCE DOES FOR US.

When Helene was a very little girl her mother

taught her to obey just as quickly as she was spoken to.

"Don't stop to ask why, when you are told to do anything," she used to say to Helene. "Do it first and talk about it afterward."

There came a time when both Helene and her mother were glad that this little girl knew how to obey at once.

Helene had started to take her favorite doll out for a ride one morning. Just as she was putting Bettchen into her carriage she heard her mother call: "Stand still, Helene. Don't move or speak." Helene stood like a little statue with one chubby hand on the piazza and the other tightly clasping her precious Bettchen, wondering what mamma meant. In a moment more a mad dog came tearing across the lawn and out into the street.

Helene's mother caught up her little girl and kissed her over and over again, she was so thankful the dog had not seen her and that she was safe. "If you had moved or spoken, the dog would most probably have bitten you," she said, "but your obedience saved your life."

"I'm so glad Bettchen kept still, too," said Helene, "'cause I couldn't bear to have her all bitted up."

What might have happened if Helene had not obeyed her mother as soon as she heard her speak? How did obedience save her from the dog? What does obedience do for us?

"Helene stood like a little statue."

Get as many thoughts and illustrations as possible from the children on the last point. Then call their attention to obedience in the home and school. Suppose each child should get up in the morning as early or late as he liked, should have his meals at all hours, and refuse to do anything he might be asked. Would home be a pleasant place to live in? Would it be of any use to go to school if the children were allowed to talk and laugh instead of studying their lessons?

Bring out the thought that older people have to obey as well as children, and that our homes and our country are safe places to live in because we have laws to tell us what we must do, and because all good people obey them. If we learn to obey our parents and teachers while we are children, when we are older we shall know how to obey the laws of the country and to be good citizens.

Write the main points of this topic on the blackboard as they are obtained from the children, and use them as the basis for a review lesson.

Obedience often keeps us from getting into danger.

Obedience at home and school will make us happier and help us to learn more than if we do as we please.

Obedience while we are children will help to make us good citizens when we grow up.

Obedience to the laws will make our country a safe place to live in.

As a closing exercise, ask the children either to reproduce some of the stories already told, or to relate others of their own showing what obedience is. Ask all who want to grow up good citizens of this country to rise while you write on the board the pledge,

I will try to obey at home and at school so that I may be a good citizen,

for the class to repeat as they salute the flag.

BEDTIME.

Do you know
Why the snow
Is hurrying through the garden so?
Just to spread
A nice soft bed
For the sleepy little flowers' head.
To cuddle up the baby ferns and smooth the lily's sheet,
And tuck a warm white blanket down around the roses' feet. —E. H. T.

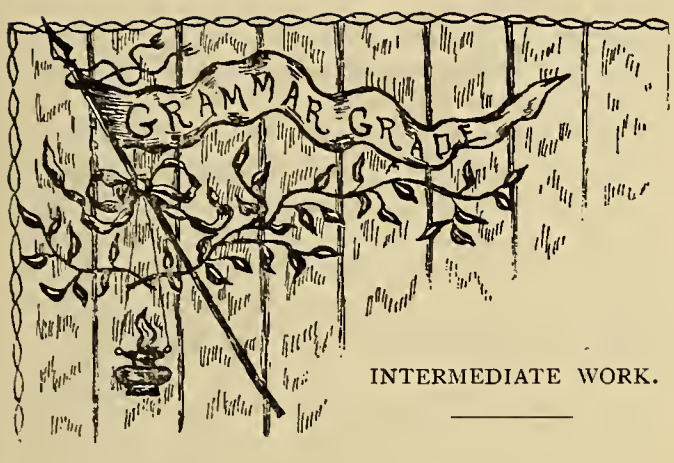
A "befo' de war" matron was teaching one of the little darkies on her plantation how to spell. The primer she used was a pictorial one, having over each word its accompanying picture, and Polly glibly spelled o-x, ox and b-o-x, box, etc. Finally the teacher put her hand over the picture and said:

"Polly, what does o-x spell?"

"Ox," answered Polly, nimbly.

"How do you know that it spells ox, Polly?"

"Seed his tail," replied the apt Polly.—[Memphis Scimitar.



INTERMEDIATE WORK.

ELEMENTS OF GREATNESS.

"EVERY man stamps his value upon himself and in the long run passes for no more than he is worth."

When the class of 1853 was graduated at Harvard their photographs were taken and preserved in book form. Forty years later, the photographs of all the survivors were placed in the same book, opposite the earlier likenesses. A French visitor picked up the volume one day, and after carefully examining it remarked to President Eliot who tells the story, "This is the most optimistic human document I have ever seen." These men had won distinction in life and the history of their achievements was written in their faces. We are indebted to such men for the great inventions of this century, for the present high standard in education, for the progress made in art and science, for our very civilization.

Some one estimates that the world would actually starve in two or three years if all production should cease. In case one man, then, is idle, or fails to bring forth his quota in whatever department he elects to serve, the world is by so much the poorer, and whatever advantages and benefits may come to him are taken without adequate return on his part. Young people must be taught to call this by its true name, dishonesty; to realize that instead of the world's owing them a living they are the debtors for every home comfort they receive, for every educational advantage they enjoy, and for the safe and honorable government under which they live. Consequently, they are in duty bound to fit themselves to discharge this obligation to the utmost farthing.

Not all will choose the same line of work, and but few can be leaders; the many must follow. Every one can do something, however, and all in so doing can set the mark of achievement high. Only thus can we give to the world our best.

"A man's reach should exceed his grasp,
or what's a heaven for."

Great help in this work of preparation is found in the history of those who have done most to make the world what it is to-day. The story of their lives is of thrilling interest. Read and study it with your class. Let them live in an atmosphere of heroism until it is unconsciously absorbed, and they too long to be and do.

Begin with distinguished men and women who are already familiar to the class through their reading. Have their names written on the board, and opposite each write one or more traits of character which helped to make the possessor great. After fifteen or twenty names have thus been written, ask some one in the class to go over the list and underscore those characteristics which appear opposite more than one name.

AN EARNEST PURPOSE.

The next thing is to select the most important as a starting point for our study of the elements of greatness. What is the first thing in a book as we open it? The title. What is the first thing to be decided in starting on a journey? Where one is to go. What is the first essential in a great or successful life? An earnest purpose which nothing can daunt or discourage.

Have the class find how many people on their list have had such a purpose and have stuck to it in spite of every obstacle. What were the ruling motives in the lives of such characters as the Pilgrim Fathers? the signers of the Declaration of Independence? Webster? Garrison? Calhoun? Horace Mann? Mark Hopkins? Harriet Beecher Stowe? John B. Gough? What difficulties were met with in each of these cases? How were they overcome? What success finally crowned their efforts?

When James G. Blaine was a very young man he took Henry Clay for his model and determined to be like him, and even greater. Who was Henry Clay? In what ways did Blaine resemble him? How did this resolution effect his life?

The night before Mr. Moody died, he said to his sons: "I have always been an ambitious man, not ambitious to lay up wealth, but to leave you work to do." What was Mr. Moody's great purpose in life? What did he accomplish by means of it?

A second element of greatness which your class will find characteristic of probably every name on their list is that of

SELF-RELIANCE.

What is it to be self-reliant? Why is this quality an element of greatness? How is it to be acquired, wrought into the fiber of our being? Give these questions to your class and ask them to find the answers by studying the

lives of such men as Washington, Lincoln, Farragut, Dewey, or any one else who has been a successful leader of men, or who has held, with honor, a position of great responsibility.

Suggest that each member of the class select for special study some one person in whom they think self-reliance has been a prominent characteristic. How was it shown? What was accomplished by it? Encourage your pupils to bring to class stories and incidents which reveal self-reliance in every-day life as well as in the career of great men.

Compare the self-reliant person to one of the magnificent steel structures constantly going up in large cities, able to support the weight of tons and unmoved by storm or tempest; while the man who lacks this quality is like a child's house of blocks which tumbles down at the first breath.

How was Washington's self-reliance shown in his early life? As a surveyor? In the French and Indian wars? As commander of the American armies during the Revolution? As President of the United States? What training did Lincoln have in self-reliance? How did it help him to meet the greatest crisis in our history? In what ways was Grant self-reliant? How did he get his training? How did it serve him in the Civil War?

When Dewey was a young officer, some one said of him to Admiral Farragut, "That young man will make his mark in the world if he ever gets an opportunity."

"Yes," answered Farragut, "and he will make the opportunity." How did Farragut's words come true? Suppose a weaker man had been in command of the American fleet in the Pacific during the Spanish War, what might have been the result? How was his self-reliance shown in entering Manila Bay? In maintaining his position afterward?

Why do the engineers who run the Empire State Express need self-reliance? How much depends on their unerring vision and judgment? In what other occupations is self-reliance indispensable? How may it be cultivated at home? in the schoolroom? Do we get it by doing what is easy or what is difficult? By shirking responsibility or assuming it?

INDUSTRY.

How many great men and women can you think of who have been hard and incessant workers? Do you know of any who have been lazy all through their lives? What does this show as to the need of industry in the development of a great character.

One of Thomas A. Edison's friends says that the great inventor never spent an idle day in his life, and he himself declares, "I enjoy work." How has his industry shown itself? How has it helped to make him great? What has industry done for the Vanderbilts and Stewarts and Rockefellers of this country? How has it contributed to the success of Booker Washington?

A convict in a penitentiary said his wrong-doing was all due to idleness when a child. He had plenty of work to do but he would not do it, and his parents did not insist. In another prison, not one in ten of the inmates has ever been trained to any useful work. What has idleness had to do with the life-failures of these men?

A number of distinguished people, including a President of the United States, a state governor, several senators, congressmen and cabinet officers, once found themselves together in a railway train and began talking of their childhood. Every one of the number had been a poor boy going barefoot in early life, and obliged to make his own way in the world. What had industry done for them? In what ways is poverty a good thing for people? Why is it an advantage for young people to have to work and to support themselves in part while still at home? Why do such people generally make good citizens?

THRIFT.

Call the attention of the class to the great business leaders of the country, to those who own and control the largest industries, and to those who are the railroad magnates of the United States. What persons have done most to develop our metals, coal, iron, aluminum and others? What men have done most to make the use of electricity practical and common? Through what agency was the Pacific coast opened up to trade?

Who were the great financiers of Washington's time? How much depended upon them during the Revolution and the early days of our country's history? What has the United States owed to such men ever since? What have they done for education? for the erection of public buildings? for charities? for the development of the country? for its protection in times of war or panic? How did they get their wealth in each case? How have they been able to keep it? How many of them were spendthrifts in their youth or continually getting into debt? How many were economical through life? What is the meaning of the old proverb, "A penny saved is a penny earned?" What other proverbs have we relating to thrift?

What characteristics of the Jews early made them the greatest money-making nation of the world? Why is so small a proportion of Jews to be found in poorhouses or dependent upon charity? Which are the most improvident nations in the world? How do these compare with others in regard to poverty?

Help the class to get clearly in mind the dis-

tinction between thrift and miserliness; between generosity and extravagance. They should realize fully why the one is a virtue, necessary both to the success of the individual and the carrying out of his plans for his fellow-citizens and his country, while the other is a vice to be despised and shunned.

SOBRIETY.

A frank, honest, young fellow entered a merchant's office recently and asked if he wanted a boy. The head of the firm looked at him keenly for a moment and then said:

"I did not a moment ago, but I do now, and you are the boy."

Tell the class this incident and ask how much they can tell from it of the boy's appearance, manner and habits. How do we know his teeth were not stained by tobacco-juice and that there was no taint of beer on his breath? Why is sobriety another important element in greatness? Does the young man who drinks or smokes stand an equal chance in any branch of business with others who are free from such habits? What nations have been degraded by intemperance? How much of the poverty and wretchedness in this country is produced by this curse? How many of the inmates of our prisons, poorhouses and asylums owe their downfall to the formation of intemperate habits? Why did Edward Everett Hale say that his parish would readily undertake to relieve all the distress in the city of Boston not caused by strong drink?

To my Valentine:

"Prithee tell me, Dimple-Chin, at what age does love begin?
When did'st learn a heart to win? prithee tell me, Dimple-Chin."

A major of Sheridan's army states that history has not told the whole story of the battle at Winchester. When the Southern troops routed the Union army and drove them from their camps, they found a liberal supply of whiskey in every officer's tent. In two hours half the Confederate officers were drunk. This was the true reason why so little resistance was made when General Sheridan rallied his men and swooped down upon Early's army, carrying everything before him, recapturing his own guns as well as taking those of his enemy. Officers and men have need of all their senses on the battle-field, and alcoholic beverages have the power to paralyze the very faculties required.

What other battles of the war were lost because the commanders were incapacitated from the whiskey they had drunk? What has been the history of the canteen system during the Spanish War? Why do all the greatest commanders of the world and some of the most distinguished men unite in opposing it? Why do school boards object to principals who use tobacco? Why are parents, even those who themselves smoke or chew, almost always unwilling to have their children begin the practice? Are these habits ever a help in making up a great character? How are they a hindrance?

Other elements which enter into the formation of true greatness may be selected by either teacher or pupils and analyzed as closely as time will allow. But one or two should be taken up in a single lesson, and these should be illustrated so fully as to leave lasting impressions of their importance. Best of all, the teacher who exemplifies in his own life the qualities which make up the noble man or woman and the patriotic citizen is giving to his pupils the strongest incentive to do likewise. It should be made plain to the class that the most distinguished men and women did not find greatness ready-made. They got it by practice, by taking up a hard study and mastering it, by depending on their own efforts, even while they were children, instead of waiting to be helped, and by doing their very best wherever they were placed.

"In life's small things be resolute and great
To keep thy muscle trained. Knowest thou when Fate
Thy measure takes, or when she'll say to thee,
'I find thee worthy; do this deed for me?'"

THE MEANING OF CIVILIZATION.

A people is civilized when it has formed institutions for itself which will enable each individual to profit by the efforts of every other individual, and to be aided by the experience, the wisdom and the thought of others. There must be an increasing rational self-activity which contributes through industry or through thought to the well-being of other men and of the world. The degree of advancement of a nation is indicated by these things.

The highest ideal of a civilization is that it should be engaged in elevating the lower classes into a participation, into a good and reasonable and increasing self-activity. With this increase of self-activity there should come an increase in creature comfort and an increase in spiritual and mechanical intercommunication.

If we can not come in contact with lower races without exterminating them, we must still be far down in the scale of civilization. We must set those races on the road to progress. We must emancipate them from ignorance. We must train them for productive industry. We must substitute a civilization of the printed page which governs by institutions rather than by authority. We must have a right to enforce such a civilization.—WILLIAM T. HARRIS.

They never fail who die
In a great cause. The block may soak their gore;
Their heads may sodden in the sun; their limbs
Be strung to city gates and castle walls;
But still their spirit walks abroad. Though years
Elapse and others share as dark a doom,
They but augment the deep and sweeping thoughts
Which overpower all others and conduct
The world, at last, to freedom. —BYRON.

Washington was not great because he did more than any other man of his time to conquer American independence. He was great because from earliest childhood, by mother, by teacher, by self, he had been taught self-reliance, and when under God's Providence he had great responsibilities placed upon his shoulders he measured up to the times, and because of these lessons he fulfilled his mission.—W. H. SCOTT.

"Bring me men to match my mountains,
Bring me men to match my plains,
Men with empires in their purpose,
Men with eras in their brains.

"Bring me men to match my prairies,
Men to match my inland seas,
Men whose thoughts shall pave a highway
Up to ampler destinies."

ADVICE WORTH MORE THAN MONEY.

A young man who wished to get into business for himself asked an old Philadelphia millionaire for pecuniary assistance.

"Do you drink?" asked the millionaire.

"Once in a while."

"Stop it! Stop it for a year and then come to see me."

The young man broke off the habit at once and at the end of the year came to see the millionaire again.

"Do you smoke?" asked the successful man.

"Now and then."

"Stop it! Stop it for a year and then come to see me again."

The young man went home and broke away from the habit. It took him some time, but finally he worried through the year and presented himself again.

"Do you chew?" asked the philanthropist.

"Yes, I do," was the desperate reply.

"Stop it! Stop it for a year and then come to see me again."

The young man stopped chewing, but he never went back. When asked by his anxious friends why he did not call on the millionaire again, he replied that he knew exactly what the man was driving at. "He'd have told me that now that I have stopped drinking and smoking and chewing I must have saved enough to start myself in business. And I have."— [Selected.

PUSSY WILLOW.

I know what the fairies do with their muffs
When the winter's spent,
And the warm south wind with its coaxing puffs
Makes the ice relent.
They go where the pussy willow stirs
In the wind, all bare;
And, just as your mother does with her furs,
Hang them out to air.

—LYDIA A. HASBROUK.

AMERICAN IDEA OF LIBERTY.

The American idea of liberty is of liberty protected by law. This principle is carried out in our own national government. The power of the general government is given to it in order to secure the blessings of liberty to the people; not to destroy that liberty, but to protect it. Under this government we have flourished during this first century as few nations of the world have ever done. We have also survived the shock of a great civil war, which settled the question whether the constitution should be accepted for all it means. We may therefore reasonably hope that our liberty, protected by the strength of our national government, will be handed down to a remote posterity. — WRIGHT.

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PROFESSOR ATWATER NOT MISJUDGED.

AN article published in a leading daily asks in its headlines, "Has Professor Atwater been Misjudged?" It is evident from the context that this question is asked because of what it is claimed that Professor Atwater teaches in his classes. This is not the question before the public. The real issue is the unretracted charge reported from Professor Atwater's address of last June and sent broadcast through the land, that the pulpit, platform, Sunday-school and public schools are in error in teaching that alcohol is not a food but a poison.

Dr. C. A. Herter, Professor of Pathological Chemistry in University and Bellevue Hospital Medical School, New York City; Dr. Frank Woodbury, former Professor of Materia Medica in the Medico-Chirurgical College of Philadelphia, now Professor in Philadelphia Polyclinic and College for Graduates; Dr. Seneca Egbert, Professor of Hygiene in the Medico-Chirurgical College, Philadelphia, and Dr. W. S. Hall, Professor of Physiology in the Northwestern University, Chicago, after separate and careful examinations of Professor Atwater's published report, say that his own figures in this report show that he has not proved what he claims. On the contrary, Professor Herter says: "Indeed, if persons on a diet adapted to keep them in nitrogenous equilibrium regularly showed such losses of nitrogen while using alcohol as are shown in Dr. Atwater's tables, we should have very satisfactory evidence that alcohol was acting as a poison to the cells of the body, that is, as a protoplasmic poison;" and further, that his experiments "throw no light whatever on the food value of alcohol when used continuously." Professor Hall says: "But one tenable conclusion can be drawn from Professor Atwater's report, namely, alcohol is oxidized in the system, but is not food."

It will be noticed that these savants use the word food in its accepted sense. They do not have one definition for the scientific man and another for the people.

A REASONABLE REQUIREMENT.

A CLIPPING from a Chicago paper recently sent me says the recent State Association of Teachers was astonished by the introduction of a resolution which condemned the compulsory teaching of the deleterious effects of alcohol and narcotics. The mover of this resolution declared as his reason:

"The law that compels teachers to devote ten minutes a day in the physiology class to dilating upon the evils of intemperance and the ruinous effects of tobacco defeats its object."

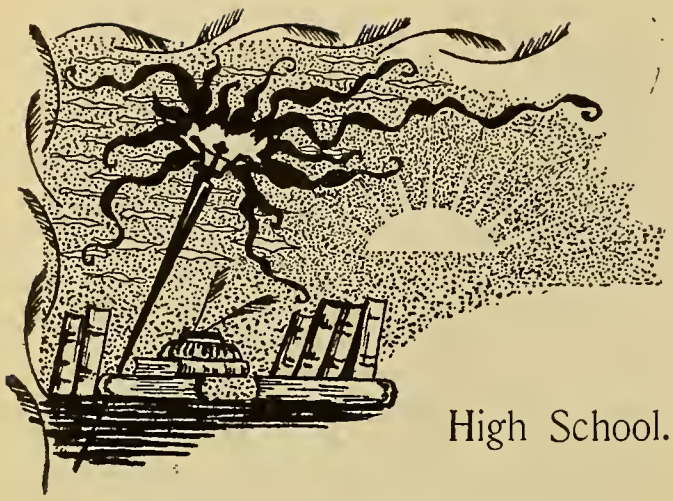
No state in this country has such a law. The law of Illinois calls for only two hundred and forty graded text-book lessons in the whole subject of physiology and hygiene, including the temperance matter, and this is to be distributed through six years at the rate of forty lessons a year, with oral instruction for all pupils in the primary grades. The distinctive temperance teaching this law requires in primary grades, estimated on the average length of lessons, would not amount to more than an hour and a half a year, nor more than four hours per year in grades above the primary. All the rest of the study is hygiene and sanitation, with physiology enough to make it intelligible. No one who wants the instruction given at all could claim that this is an extravagant amount of teaching on these vital topics.

Laws enacted by the National Congress, by Illinois and other states, require "the nature of alcoholic drinks and other narcotics, and their effects upon the human system, to be taught in connection with the various divisions of physiology and hygiene."

That is, when pupils learn of the structure and use of the various portions of the body, as the nerves and brain, in that connection and as a part of the hygiene of those organs they must learn what alcohol and other narcotics have the power to do to a human being through their action on the organs in question. The same is true in connection with each division of physiology.

Carrying out this rational method, it will often occur that from eight to ten high school physiology lessons, and from three to five lessons in lower grades will contain no temperance teaching at all because the pupil is getting the preliminary instruction which will make this phase of hygiene intelligible.

To take "ten minutes a day in the physiology class for dilating upon the evils of intemperance and the ruinous effects of tobacco," whether or not such dilating is germain to the lesson of the day, is not what the law requires and would be very bad teaching. Such misinterpretation furnishes no basis for the repeal of a law which, when properly carried out, always produces good results.



High School.

INDIVIDUAL RESPONSIBILITY.

AN unpretentious monument in a little Swiss village bears the inscription:

"God has his plan for every man,
And he had his plan for me."

This tomb marks the grave of a crippled lad who gave his life for his country at the beginning of the century. Napoleon's troops were overrunning Europe and this village stood just below the only pass in the Alps which gave access to the valley above. Every able-bodied man was armed and drilled to repel the enemy. Crippled Hans alone could do nothing, although his heart burned with patriotism. Brooding over his helplessness he entered the pass one evening to find it deserted. The guards had left their post for merrymaking in the village. A few moments later he caught sight of advancing soldiery. The French were coming. Without an instant's hesitation the brave young fellow lighted a torch and waving it above his head, hurried towards the village as fast as his lameness would allow. Just as he reached his comrades he was struck down by a French bullet, but the alarm had been given and the village was safe.

Sooner or later responsibility of some sort devolves upon every one. Some shirk it altogether, others assume its burdens half-heartedly, but every great soul runs to meet it and makes it his own, asking only how and where he can render the best service. The schools of this country were founded with the avowed object of training young people for citizenship, and they are a success just as far as they accomplish this end. Under a popular government there can be no national triumph which is not the fruit of individual endeavor. It is equally true that all national mistakes and sins lie at the door of every citizen. "If the flag is stained no man can say that he is all right."

We have good material to work with. Every school is full of class spirit and enthusiasm. Students are intensely loyal to their comrades and to every teacher who appeals to them as worthy of their fealty. It lies with us to foster and stimulate to large growth these first shoots of patriotic citizenship, by teaching the child from the first to govern himself. As soon as he talks with pride of *our* school he is old enough to share in its responsibilities and make its honor his own.

Student government has been a failure in some cases because young people have been allowed to take everything into their own hands before they were fitted for the task. Preliminary training is as essential in their case as it is in that of the child nations in the Philippines and the West Indies, and where it is given uniformly good results have been attained.

Begin where you find your pupils. Give them all the responsibility they can assume and increase it as fast as possible, but keep the reins in your own hands always. Give frequent talks on some phase of patriotic citizenship closing with a general discussion in which all can join. An excellent topic to begin with is that chosen for the present lesson, Individual Responsibility.

Get from the class a list of the great enterprises in which the United States has engaged during the past century. Have this list put on the board, and write above it the question, Who is responsible?

Analyze the topics thus collected, one at a time. Suppose colonization is first selected. Points for study in this case might well be:

What has the United States done to encourage immigration?

What portions of our country have been settled by immigrants during this century?

Where have the new settlers come from.

What have they done for the country?

In discussing the last question, bring out especially the condition of the country thus settled while it was still waste land. How much was it then worth to the United States? It was covered with magnificent forests, but there was no way of getting the timber; it contained valuable mines but none of them had been worked; the soil was marvelously fertile but no crops were raised from it. How has all this been changed by immigration? Who is responsible for it? How much could the government have done by itself? How did the new settlers need the aid of the government?

The postal system is another interesting topic. Ask the class to find:

How mail was carried in Washington's time.

How the mail has increased since then.

What becomes of letters when the persons addressed can not be found.

What changes have been made in the postal rates.

How many persons are employed in handling mail.

Who is responsible for its safe delivery.

Take up a similar way some of the mistakes made by the government. For instance, our treatment of the Indians in many cases; the spoils system; boss rule in our cities; the continued existence of the canteen in the United States army; bribery and fraud in politics; violation of the rights of the ballot; the election to office of unprincipled and dissolute men.

In the last case, study with the class the voting system in use in your locality; the officers annually elected in your town, county and state; the duties of each and some of the most important items of business which come before them. Hold model elections of your own, and familiarize your pupils with the ballot and primaries. Fix responsibility for the political corruption in some sections of this country. Have the class suggest how it might be stopped. Bring forward other illustrations as occasion will permit, until they realize that every citizen is in a measure responsible for the honor of his country and that his individual life reflects either shame or glory upon her flag.

Wanted, men and women with a genius for work. It is well that they should have talent, it is well that they should have training, it is well that they should have good character, but if they do not know how to work, and have not an abiding zeal for work, their talent, training, character, will count for little towards that subduing of the earth which God had in view when he gave the world to man as the scene of his present activities.—[Chicago Advance.

"Our age wants men. Not speculative and visionary triflers, but good, earnest, transparent men, practical in bent, pure in purpose, with principles wisely selected, and gifted with courage to maintain them. Such, and such only, can help to a successful settlement of the social and religious problems that press for solution."

A SERMON IN A PARAGRAPH.

Young men, you are the architects of your own fortunes. Rely on your own strength of body and soul. Take for your star, self-reliance. Inscribe on your banner, "Luck is a fool; Pluck is a hero." Keep at your helm and steer your own ship, and remember that the great art of commanding is to take a fair share of the work. Fire above the mark you intend to hit. Energy, invincible determination, with a right motive, are the levers that move the world. Don't drink. Don't smoke. Don't chew. Don't swear. Don't deceive. Be in earnest. Be self-reliant. Be generous. Be civil. Make money and do good with it. Love your God and fellow-men. Love truth and virtue. Love your country and obey its laws. —PRESIDENT PORTER.

The Sign of the Cross.*

Greater than the achievement of the artist, the soldier, the scientist, the sculptor, the poet, the philanthropist, the orator, the builder of empires, is the building of a man. Whatever great things others may do, he does a greater who builds a man.—MONTGOMERY.

The education of a child should not be considered as simply fitting him for making his way in the world, but should aim to develop high ideals and a character full of nobility and force.—GORDY.

The doctrines of human physiology have come in just in time to save the race from destruction. Had they been delayed much longer it is doubtful whether men would have been able to discover them.—HORACE MANN.

The present generation is almost unmalleable. Men are cast-iron; but children are wax. Strength expended on the latter may be effectual, which would make no impression on the former.—HORACE MANN.

Education is not a preparation for life; it is life.—JOHN DEWEY.

* See page 81.

THE BUILDING OF A NATION.

V. THE RECONSTRUCTION OF THE SOUTH.

THE fate of the American nation hung in the balance as surely at the close of the Civil War as at any time during its progress. The sectional bitterness of a life and death struggle threatened dismemberment of the Union. The North was saddled with an enormous debt. Thousands of her noblest sons lay dead on distant battle-fields. The South was a pitiful wreck. Death had entered almost every household and taken the strongest and fairest. Only women and children survived, and a few battle-worn, broken-hearted men. Confederate money was mere waste paper, and industries were destroyed. Labor was in disrepute. The educated whites did not know how to work, and the Negroes, without the impetus of force which was the only spur they had ever known, did not wish to. New standards of living had to be set up everywhere, and only the war-trodden earth was left. In some instances, white mothers and daughters reared in luxury were auctioned off as town paupers to the lowest (black) bidder. The wrong of human chattel slavery was wiped out a hundredfold in blood and tears. The North called this retribution. But some one has said, "Retribution is only the eternal law of consequences."

Out of the wreck rose the spirit of the American people, their faith in each other and in the Union. The surrender of Lee settled finally the question of state or national supremacy. National union had triumphed over the old nullification idea. It had been an honest war and each side respected the other for sincerity of motive. The South were honestly beaten and they acknowledged their defeat like men. But defeat and poverty and humiliation were hard to bear, harder perhaps for the Southern women than for their husbands and brothers. "The proud and sensitive South," says President Andrews, "smarted under defeat and was not yet cured of the illusions which had led her to secede. Salve and not salt needed to be rubbed into her wounds."

At this crisis no wise and peace-loving man stood at the helm of the Nation. Great-hearted Lincoln with judgment ripened by the deep experiences through which he had passed, and with his intense love for the whole Union he had sworn to defend was no more. Instead, a pugnacious Executive and a determined Congress faced the problems of reconstruction. Confronted by such difficulties, with no precedent in history to follow, it is not strange that many mistakes were made. Perhaps the wonder should rather be that a new South could ever rise out of the ashes of the old.

The first step towards reconstruction had already been taken when the Emancipation Proclamation was issued, setting free the slaves in the states in which the North was at war and looking to a complete abolition of the system. The next was the re-admission to the Union of the states which had seceded. The question arose at once on what terms these states should come back. President Johnson claimed that since to secede was unconstitutional no state could legally secede; hence these were already technically in the Union and should be so regarded. He provided them with a provincial governor and legislators were elected much as usual, saving that they were required to take an oath of fealty and to promise to abide by the Constitution, including the Thirteenth Amendment. This led to the passage of many laws in the states in question calculated to deprive the Negro of his full share of citizenship.

Such measures did not satisfy the Republican Congress; as soon as they convened they adopted measures which practically overthrew Johnson's entire policy, already well under way. The Fourteenth Amendment was passed, giving the Negro full rights of citizenship and requiring what was termed the iron-clad oath, namely, that no person should hold any government office who had engaged in insurrection or rebellion against the United States. This ruled out practically every respectable white Southerner and was the cause of much trouble. Early in Grant's administration it was removed. Congress placed the states which had seceded under military rule, to be maintained until a state convention comprising both loyal whites and blacks had framed a constitution enfranchising the Negroes and had ratified the Fourteenth Amendment, including the repudiation of the Confederate debt and the pledge to redeem the national debt.

Difficulties multiplied. Reconstruction was the great issue of the election of 1868. Grant was the Republican nominee. The Democrats demanded that all the states should be restored to full rights of statehood at once. The Republicans sought the maintenance in those states at all hazards of the principles for which the war had been waged; full civil and political rights for the blacks, and loyalty to the Constitution, including its late amendments. The election returns placed Grant at the head of the nation and he proceeded to carry out his party policy with much firmness and tact.

The South respected him as they did perhaps no other man in the North. His well-known peace policy and his kindly nature made him desire to render as easy as possible the difficult step of coming back into the Union, while holding firmly to the principles for which his party stood. Owing to his counsels and official reports while still Commander-in-chief, many acts unnecessarily painful to the South were avoided.

We may say that President Grant, as the leader of the Republican party during the greater portion of this period, stands for the reconstruction of the South. But at the same time reconstruction was the work of no one man. The advice of William H. Seward, Secretary of State, and Salmon P. Chase, Secretary of the Treasury, under Lincoln, as well as that of Henry Wilson, Vice-President under Grant, men of rare ability and good judgment, helped greatly during these critical days. "Many men, many minds," was never truer than during the period from 1865 to 1876. A prominent United States congressman who had lived through those trying times remarked: "The God of our fathers, more than the wisdom of man, rescued the Republic."

One by one the states came back into line. Virginia, Mississippi and Texas were the last, and not till January of 1871 were all the states again represented in the National Congress.

Nominal statehood, however, but cloaked for many years unhappy conditions which it was hard to meet by legislative enactment. Immediately after the war the South became infested with a horde of greedy adventurers called "carpet-baggers" from the assumption that all their worldly goods could easily be carried about in a carpet-bag, out of the reach of the law. They had flocked thither for selfish reasons, imposing upon the Negroes, and under the guise of loyalists manipulating the government for their own profit.

Ulysses S. Grant.

Florida is an example of one state reconstructed by them. On the pretext of being Republican speakers and organizers, it is said that men from Maryland, Illinois and New Hampshire formed in Florida a secret organization called the "Loyal League of America." All freedmen were required to join, paying from five to twenty-five dollars as an initiation fee, according to what it was believed they could raise, and taking an oath which they were told forbade their voting for any Southern white man for office, on pain of being returned to slavery. Delegates from the League with a carpet-bagger as president formed the state convention and adopted a constitution said to have been prepared in Chicago. The carpet-baggers committed numberless outrages against justice and exercised the worst possible influence over the Negroes, teaching them to regard the Southern whites as mortal enemies whose property ought justly to be confiscated and divided among them.

To defend themselves from these intruders the Ku-Klux Klan was formed by some of the adventurous young spirits of the South. This was a secret organization of masked riders appearing generally by night and scattering terror among friends and foes. In many instances they were prevented from committing wholesale destruction only by the intervention of the militia.

By means of the Force Act, which provided for very close military supervision over elections, and other stringent measures, these abuses were corrected, but the ferment in the South manifested itself now in one way, now in another for years. The matter of fraudulent elections and the frightening of Negroes away from the polls has been at issue again and again. Public sentiment at the North has never tolerated the least infringement of the rights of the Negro, and year by year the outlook is brightening. As their own leaders have always maintained, it is to the blacks themselves that we must look for the establishment of right conditions in the South. Education and manual training are seen to be the only means of raising them to self-respecting manhood. Just as soon as they become honest and efficient and self-reliant the whites of the South will treat them accordingly, though perhaps not for generations yet as brothers. Atlanta University, Tuskegee, Fisk and Hampden have done much toward these ends.

The abnormal conditions of slavery gone, and the political situation restored as nearly as possible to its old basis, even the first decade showed a phenomenal advance in the prosperity of the country. Now that more than three decades have elapsed since the struggle, it is plain that whatever may be the differences of view-point and character the North and the South are "one and inseparable." Many things in the industrial world have helped to cement the break. The manufacturing interests of the South, stagnated by slavery, have developed surprisingly since 1870. The wealth of South-

ern mines has been explored, the value of cotton-seed-oil has been discovered, rendering the manufacture of cotton vastly more profitable. The unifying influences of steam and electricity have bound North and South together in a great network of common interests and common needs. Right moral standards have been set up, needed immigration has been encouraged and industries have multiplied. While formerly agriculture was the only occupation, as slaves were the only laborers, now that the false ideas regarding work are disappearing, whites of the South are becoming tradesmen, artisans and professional men.

The reconstruction of the South has meant a great leveling up and down, in harmony with American institutions. It has meant as much perhaps for the poor whites, in raising them out of their degradation and scorn of honest toil, and their parasitic existence as it has to the slaves. They may hold up their heads now and labor. Though it will be decades before the work is done, the difficulties in the way are negative rather than positive.

Pride in the rise of America to a first power among the nations has been shared alike by South and North, and the men who yielded as gallantly as they fought have at last grown to love again the stars and stripes. The names of Hobson, Wheeler and Schley amply attest that when the call sounded in 1897 to arm against a common foe, Southerners were among the first to claim the privilege, and among the most dauntless in maintaining the nation's honor. Not many years ago the appearance of the flag in some parts of the South would be the signal for a riot. Since the Spanish-American war one of the large circus companies traveling through the South gave a short pantomime to represent the freeing of Cuba, in which Uncle Sam, Columbia and Cuba appeared upon a high pedestal on the central platform. At its close all the bands crashed into the stirring melody of "The Star Spangled Banner," and an immense flag unfolded itself up in the dome of the canvas. Cheers instead of outcries rent the air, showing that the Southern people recognized their own at last.

Since the Blue and the Gray are thus united the motto E PLURIBUS UNUM upon our national currency bears a deeper significance than ever, a meaning that has grown "out of great tribulation."

Learning is a good thing when what is learned consists of the wisdom of the past, and when what is learned is assimilated and made useful to solve the problems that press for solution in our own age. An undigested accumulation of scraps of learning is not of practical use. It never helps the scholar to think nor enables him to act, nor to guide the actions of others. —DR. W. T. HARRIS.

A LESSON IN PUNCTUATION.

A high school girl said to her father the other night:

"Daddy, here's a sentence I'd like to have you punctuate. You know something about punctuation, don't you?"

"A little," said her cautious parent, as he took the slip of paper she handed him.

This is what he read:

A five dollar bill flew around the corner.

He studied it carefully.

"Well," he finally said, "I'd simply put a period after it, like this."

"I wouldn't," said the high school girl; "I'd make a dash after it!"—[Cleveland Plain Dealer.

"Now, boys," said the Sunday-school teacher, "can any of you name the three great feasts of the Jews?"

"Yes'm, I can," replied one little fellow.

"Very well, Johnny; what are they?"

"Breakfast, dinner and supper," was the unconsciously logical reply.—[Buffalo News.

Sammy (underneath): "I've had ernuff! Let me up will yer?"

Eddie (on top): "If yer'll gimme yer jackknife and ten marbles for an indemnity, I'll declare peace."

By referring to the editorial page, our readers will see that the SCHOOL PHYSIOLOGY JOURNAL is published but ten months of each year, September to June inclusive. Subscribers for half a year, therefore, will receive five numbers of the JOURNAL instead of six. Subscriptions may begin at any time. Back numbers will be furnished whenever desired, except in cases where the edition is already exhausted.

ALGY: "I don't want you to wash my face!"

GRANDMA: "Why, I've washed my face three times a day ever since I was a little girl."

ALGY: "Yes; and just see how it's shrunk it!"—[Ex.

Teacher: "Bound United States."

Boy: (who does not remember) "Since the war, ma'am, there is no north, no south, no west, no east—its 'our glorious country.'"

Work, unless it be for righteousness, must be work for the devil. There is no middle ground. If you are not working for what is decent you are allied with the forces of unrighteousness. Never lay the flattering unction to your souls that you can hold yourselves apart from anything wrong in the nation—that there can be a stain on the flag and no stain will rest on you. If the flag is stained, you can not say you are all right.—THEODORE ROOSEVELT.

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RETURN OF THE BIRDS.

"I hear, from many a little throat,
A warble, interrupted long;
I hear the robin's flute-like note,
The bluebird's slenderer song.
Brown meadows and the russet hill,
Not yet the haunt of grazing herds,
And thickets by the glimmering rill
Are all alive with birds."

A MORAL OR A SCIENTIFIC QUESTION, OR BOTH?

THE following misconceptions have arisen in certain quarters concerning the teaching of physiological or scientific temperance:

First, that temperance is not a scientific but a moral question; therefore, if taught at all in the schools it should be from the moral standpoint only. "The strengthening of the moral nature is the best preventive of intemperance," these objectors say. "You should strengthen the will to prevent the pupil from drinking."

Second, if you teach the pupil the evil character and effects of alcohol, tobacco, and other narcotics, the law of perversity in his nature will make him want to try those things for himself.

Third, as long as the fathers smoke and drink, it is not only of no use to teach the children not to do so, but such teaching is disrespectful to parents.

In answer to the first objection that temperance is a moral, not a scientific question, let us inquire:

First, is it not true that a moral question is one that considers what is right or wrong in action on the part of beings capable of choice?

Second, are there not certain facts which are the reasons for an action or course of action being right or wrong?

Third, if these facts, the reasons for the right or wrong, are duly arranged in the case of each obligation, do they not form the science of that special obligation? Webster says that science is knowledge duly arranged.

Fourth, can a person be taught the principles of morality in any case, or to choose the right intelligently, without being taught the facts which show why one course, or set of acts, is right and another wrong; are not these facts the science of the case?

To illustrate, moral obligations may be classified under three general heads:

Duties to our Maker.
Duties to our fellow-men.
Duties to ourselves.

The facts which are the reasons for our duties to our Creator are set forth in the science of theology.

Those in the case of our duties to our fellow-men are classed as the science of sociology.

The facts that prove our moral obligations to ourselves in the case of alcoholic drinks and other narcotics are very properly termed the science of temperance; and here, as in the case of other duties, no person can fully comprehend the extent or scope of that obligation without knowing the facts.

The answer to the question, What are the nature and effects of these substances? contains the facts in this case, on which the whole temperance question rests.

There is no such thing as a moral question without a basis of fact which is the science of the question. These are not the days of dogmatic morality. Modern morality teaches the reasons for the right, shows why, and thus strengthens the moral nature.

The objector says, "Strengthen the will to resist temptation." How do we strengthen the will? The will is the faculty of conscious and especially of deliberate choice or action, and our choices are more or less influenced by our knowledge or ignorance of the facts in the case. How would you strengthen the will of a boy against the temptation to row across the Niagara river a little way above the falls; by telling him he must not, it would be wrong, or by explaining to his reason the perils that inhere in that fatal current? How would I strengthen a boy's will against intemperance? I would try to give him intelligent reasons on which his will should act. Just as I would teach him the character of the Niagara rapids, I would teach him the nature of those other, the alcoholic rapids, which lead to a worse, a more hopeless plunge into utter darkness. While I would never exaggerate, I would search for the truth on this topic as for "hid treasures," and then teach it, abating not "one jot or tittle," leaving the consequences with him who said, "I am the Truth." He has so made the human mind that it is moved by truth that warns as well as promises. I would teach the boy before appetite is formed the dangerous and deceptive character of alcoholic drinks and other narcotics, especially the proved fact that a little alcohol in any liquor has the power to

create an imperious, uncontrollable, and destructive appetite for more; and therefore its use in any quantity is never safe. I would thus show him that there is a scientific connection between the first glass and the drunkard's fate; I would not preach at the boy or weary him with repeated homily, but I would lead him, through the study of the laws of his own being, to see and understand for himself that the inestimable blessing and happiness of a strong, healthy, useful life are the result of obedience to laws that are written in our living tissues, and that the penalty of disobedience inheres in the law itself. I would strip the wine-cup and the whole brood of strong drinks, the pipe, the cigar, and the cigarette, of the glamour with which ignorance and tradition have decked them, and help the boy to see them and their consequences as labeled by modern science—Narcotic Poisons.

In answer to the second objection, that teaching the evil character of alcoholic drinks will make the pupil want to try them for himself, we reply: "If we tell the boy the perils of the rapids in the smooth, safe-looking stream above the falls, will he immediately wish to embark thereon?" Is it a rule that teaching the consequences of evil is only furnishing a motive for immediately plunging into that evil? If so, there must be something radically wrong in the most authoritative of all teaching; for all through the Bible the blessings of right-doing are coupled with vivid descriptions of the consequences of following the wrong. Gerizim and Ebal stand together. I am sure the great body of teachers in our land will agree that it will be safe for us to follow in method the great Teacher. He made the human mind, and he knows the laws of its development far better than we ever can, after all our study. Objectors certainly need a new and expunged version of the greatest of all manuals of instruction.

Experience after all must decide the value of all educational ideas, and, happily, we are not without precedent as regards temperance physiology. Forty-three states of our country have laws requiring this study for all pupils in all schools. Whenever the spirit and letter of these laws are obeyed, the expected results of such education have followed. Three things are essential to a thorough study of this subject by all pupils in all schools as the law specifies.

First, there should be a definite place in the course of study for a minimum number of progressive lessons, not less than three per week for ten weeks of each school year, enough to cover the topic from the first primary grade through the ninth year, or through the first year of the high school where there are only eight school years below the high school.

Second, for children in the first three primary years, this instruction should consist of simple but progressive oral lessons in such facts of hygiene, including those relating to alcoholic drinks and other narcotics, as the advancing comprehension of pupils in these grades can grasp.

Third, pupils above the primary classes should be furnished, as one means of information, with well-graded text-books containing the truths the law requires taught on this topic.

Fourth, this subject should be taught with the same wise, thorough and modern methods of instruction, and with the same tests for promotion as other branches.

Pupils thus instructed have not consequently rushed headlong to the saloons. On the contrary, an intelligent aversion to strong drink and other narcotics is manifest; fewer cigarettes are smoked, and pupils are more careful to obey other laws of hygiene.

Giving an occasional temperance exhortation in the schoolroom may take less time and study on the part of the teacher, but, compared with the results of carefully prepared lessons which guide the pupil in finding and intelligently understanding the reasons for total abstinence from alcohol, tobacco, and other narcotics, and for obedience to other laws of health, the mere exhortation, or so-called moral homily, falls immeasurably short.

The prophet said, "My people are destroyed for lack of knowledge," not for lack of exhortation. To a right-minded child or youth, the most impressive of all moral lessons is the one that convinces his understanding, and is thereby lodged in his reason. That all children and youth are not right-minded towards alcohol and tobacco is evidence of the deep wound these substances have made upon our humanity, through inheritance, upon children and children's children. That some of these, heavily weighted with the sins of the fathers, will inevitably go wrong, does not prove that faithful instruction is useless in all other cases.

To those bringing forward the third objection we would put the question: "Shall we make no attempt to teach the children better, because the fathers drink and smoke?" Because some parents murder the Queen's English, we do not therefore think it useless or disrespectful to parents to teach the children correct speech, and as a consequence the generations rise in the scale of better utterance.

Truth is the lever of Archimedes that moves the world. The truth concerning the evil nature of alcoholic drinks and other narcotics is the lever destined to overthrow their use. To the teacher has come the opportunity to scatter that truth. Opportunity is God's command.

MARY H. HUNT.

Primary Lesson.

FIRST YEAR.

THE HAND.

"GIVE Ed just the right tools and he'll do a good job; but if Cy hasn't what he needs at hand he'll make his own tools and say nothing about it."

The speaker was an old carpenter, and he referred to two brothers who had learned the trade of him and were about to start in business for themselves. It requires no prophet to foretell the successful man. He does not need to wait for opportunities; he is able and willing to make his own.

Psychology has taught the world no more valuable lesson than this, that the power to think and the power to do are mutually dependent. As a result of this knowledge manual training is coming more and more to the front, and is already an established feature in the most progressive schools. While it will be decades yet before this union of the theoretical and practical becomes universal, the live teacher can easily adapt the essential features of manual training to her own school and give its advantages to her pupils. The hand work of the kindergarten should be continued in the primary grades. In number work the children should find by actual measurement that two pints make a quart and twelve inches a foot. Teach geography from the hills and valleys and water about you, and in stormy weather from sand-maps which your pupils have helped to make. Show them how to use scissors in cutting from paper the birds, flowers, and animals they read about in their language lessons. Let them make drawings of the same or model them from clay. Nearly every lesson in the lower grades may be thus supplemented and illustrated by actual hand work and this usually means doubling its value. Hand and brain work together most efficiently when each has its proper share of exercise.

USES OF THE HAND.

Prepare for this lesson by bringing together articles which the children have made during the year, pictures, boxes, sewing-cards, clay models and the like, also specimens of more difficult forms of hand work, such as fine sewing and embroidery, scroll work, a watch or clock which can be opened to show the machinery.

Keep everything covered until time for the lesson, then have the articles placed on a low table where the children can look at them. Ask each child to select his own work and tell how he did it. What parts of the body did he use? How much can we do with our hands? Place a ball or block on the table and let the children find by touching, lifting, holding, and tossing it from one to another, some of the ways in which we use our hands. Do not tell them what to do, but let each one find out for himself by actual trial. Illustrate further by asking some one to bring you a pencil. Have the class watch the child's movements as he obeys, and notice the four different ways in which he uses his hands; first, in touching the pencil, second, in raising it from the desk, then in holding it as he walks to you, and finally, in placing it in your hands. Give each of the children in turn something of the kind to do, while the others notice and describe what the hands do in each instance.

Vary the exercise by playing games in which the hands are used in various ways, such as "Oats, peas, beans," "Birds fly," or some of Froebel's charming finger games in which the child is taught to think of the parts of his hand as a little family which it is his duty to watch over and control.

In what ways do we use our hands in each of these games? Ask the children to clasp their hands behind them or on top of their heads. How much can we do with our hands in these positions? What do we need our hands for?

Have some one stand on the platform with his hands in one of these positions while the class mention some of the games he could not play if he could not use his hands or had none. What other things besides games would he have to give up if he had no hands? Another may now stand before the class with hands free while the rest tell what the owner can do with a pair of hands which he can use as he likes. Name things we can make with our hands. How do men build houses, or raise fruit and vegetables to eat, or write books, or paint pictures.

Tell stories showing how we can use our hands in helping others, which is the best use of all.

A POSTPONED PICNIC.

Marcia lived in a very busy home and sometimes she thought she had very little time for play, there were so many things for little hands and feet to do. One day she was invited to a picnic on the river to gather water-lilies and to take lunch afterward on a lovely little island.

"Be sure to be on time," uncle Joe told her, "I never wait a minute, you know."

"Oh, I will," said Marcia. "It will be my first picnic. I never went to one before, and I wouldn't miss it for anything."

For days Marcia talked of nothing else. When the morning for the picnic came, she was up very early to get her tasks all done before it was time to start.

She cleared the breakfast table and swept up the crumbs. Then she washed and wiped the dishes, dusted the rooms, and ran up and down stairs on so many errands that she would have been quite tired out if it had been any other day.

At last she was ready to start, and very pretty she looked in her gingham dress and white sun-bonnet.

"Let me see your hands," said her mother. "They must be as clean as they are helpful, then everybody will be glad to see them."

Marcia held them up and her mother smiled. For once, they were white and clean, and she started off a very happy little girl.

When she passed the next house some one tapped on the window. It was poor old auntie Saunders, who was a cripple and had to lie in bed most of the time.

"Will you put this letter in the office for me, my dear?" she asked. "It's very important that it go to-day."

Marcia took the letter rather doubtfully. The office was a long way off in another direction. Perhaps she would have time if she hurried. She ran most of the way, but alas, the boat had gone when she reached the river.

Poor Marcia! The tears came so fast she could hardly see to walk home, but somehow in spite of her grief she was glad she had mailed the letter.

She was gladder still the next day when Uncle Joe came to see why she had disappointed them, and told her they would have another picnic just on her account.

"No little girl who risks her own pleasures to help others is going to lose them when I'm around," said Uncle Joe, and Marcia thought he was the very nicest uncle in the world.

"His hat is battered, his shoes are torn,
And his outgrown clothes are sadly worn;

But from his heart, brimful of joy,
We catch a ray—God bless the boy."

After telling this story to the class, ask them to tell you how Marcia used her hands. How did she help her mother? How do we know that she had kind hands and a kind heart? How can we help our hands to grow useful? How many people have our hands helped to-day? How did they do it?

PARTS OF THE HAND.

Put a good-sized drawing of the hand on the board, and in this write the names of the fingers and of each part of the hand as given by the class. Then erase the names and let the children supply them in drawings of their own. Let them come to you one at a time and touch such parts of your hand as the class may suggest. Ask all to lay their hands flat on the desk, palms upward, and touch each part as you give the name. Then let them turn the backs of their hands up and repeat the process. Have the names of all the parts of the hand written as a spelling lesson—back, palm, fingers, tips, thumb, ball, joints, nails, skin.

Bring a pet cat into the class and continue the observation lesson by asking them to find what parts of the kitty correspond to our hands. How many toes has she on her fore feet? On her hind feet? How do her nails differ from those on our fingers? What reasons are there for this difference? What can the cat do with her paws which we can not with our fingers? What can we do which she can not? How is the covering of her fore paws unlike that on our hands? How many joints has the fore paws of a cat? How many in our hands? Why do we need so many joints? How are our hands joined to our arms? How many ways can we move our hands? our fingers? Ask the children to notice all the animals they see and find which ones have fore limbs like the

cat. What do cows and horses have instead of hands? Instead of fingers?

Put on the board the picture of a fish. Let the children point out its fore limbs and show how these are unlike their own. What do we call the fore limbs of a fish? What are they used for? Follow this with the picture of a bird. Study its wings in the same way. What can the canary do with its wings which we can not with our hands? What can we do with our hands which birds and fish can not do with their fore limbs?

Review by describing the fore limbs of well known animals and letting the children guess the names. Test their powers of observation also by putting drawings of the same on the board, and asking them to write the correct name under each.

Have the class count the bones in each finger; in the thumb; in the hand. How many in all? Bring a large doll into the class and show by means of it why we need so many bones in our hands. Could we pick up small objects if our hands were in one piece like the doll's? Ask the children to try to pick up a pin holding their fingers straight and stiff.

Call attention to the way the thumb is placed in the hand. Why is it not in line with the fingers? How does it help in picking up objects or holding them? How are the fingers tipped on the back? How do the nails help?

"Marcia took the letter rather doubtfully."

CARE OF THE HANDS.

Read to the children the first few stanzas of Longfellow's "Village Blacksmith." Why did the smith need "large and sinewy hands?" How did they come to be so strong? What other people need powerful hands? Tell the class the story of the emperor who used to bend a gold coin double in his fingers and leave it at the door instead of a card when he made a call, the only man in Europe strong enough for such a feat. The hands of the strongest men were soft and delicate in childhood, but they grew strong and large because they were given a great deal of exercise. If we want strong hands how can we get them?

What kind of hands must a watchmaker have? a pianist? a nurse? What people need clean hands? What can we do to our hands to keep them soft and flexible and able to do fine work? What hands do we like best?

Get a magnifying-glass and show the class the pores of the skin on the back of the hand. Tell them that the hand needs these little ventilators just as much as we need windows and doors in our houses, to let in plenty of light and air and to let out bits of waste matter. When our hands are dirty these tiny pores are stopped up. We must keep our hands clean then, just as good housekeepers do their windows.

Special privileges may be allowed children who take the best care of their hands, and no one should be allowed to handle pictures or books with soiled hands. One little boy was induced to keep his hands in good order by his fondness for stories which were told him only when he could show clean hands and face.

Many children suffer from chapped hands in cold weather. Tell them how to avoid this by washing their hands in oatmeal water and drying them well before going out in the cold.

Distinguish between necessary care of the hands to fit them for delicate work, and unwillingness to engage in any useful labor for fear of soiling or roughening the hands. Teach your pupils that every one has work to do, and that although in doing it neither his hands nor himself are to be spared, it is still his duty to protect these most useful little servants just as far as he can.

Put on the board an enlarged drawing of the

back of a finger-tip and from it show the children how to care for the nails. They must first be kept clean, then neatly trimmed, following the shape of the fingers, and the skin kept pushed back from the root to show the half moon and prevent hangnails.

AUTHORITATIVE QUOTATIONS.

GROWTH DEPENDS ON EXERCISE.

Within certain limits the growth of an organ is in proportion to its exercise, and all excessive exercise is followed by a corresponding depression.—[Journal American Medical Association.

THE HAND AN INDEX OF CHARACTER.

Let me shake hands with a man and I will tell you something about his health. The firm hearty hand-shake of a sincere man may be rather rough, so that one is taught he has a grip, but it indicates stamina. The flabby hand that returns no pressure belongs to the person who has no great strength of body or mind. The quick, nervous hand-shake of an excitable, nervous temperament, and its opposite, the nerveless, passive one belong to persons in ill-health. The hand that threatens to collapse in yours means fear.

The feel of the hand called magnetic indicates health and kindness and a desire to help others. In many ways we may decide character by the hand as well as by the brain.—[Journal of Hygiene.

BOTH HANDS NEED TRAINING.

To be ambidextrous shows that both hemispheres of the brain, so far as their control of the arms is concerned, are nearly alike. How people originally grew up to use one hand more than the other is not known definitely. The way to become ambidextrous is to show no preference to the use of one hand and arm over the other in the daily tasks, but to use them indiscriminately to open doors, take hold of articles, as throwing a ball or using a hammer, and do work with the left hand or right hand alike. Mothers might train their children early in life to this practice, so they would never know the difference between their sides—as to handiness in work. Training the left arm to be as efficient as the right, at the same time educates the right side of the brain. This side controls mainly the left side of the body, and vice versa. Modern physical training is doing something to make people ambidextrous. So are the typewriter, the piano. Writing with a pen or pencil does the opposite.—[Journal of Hygiene.

NARCOTICS INJURE HEALTH.

He who desires the supreme vigor of health can have no use for alcohol, tea, coffee or tobacco. With pure water, well-chosen wholesome food, the exclusion of all narcotics, and clean habits, together with our bracing climate and active pursuits, and the intermixture of the most enterprising races of the world, the American people should develop into the highest type of individual, family and national life.—Chas. H. Shepard, M.D.

HEALTH IS WISDOM.

It is supreme wisdom to begin life's education with a refining care of the body. This not only lays a good foundation for health in maturer years, but opens up the avenues to learning itself.—[Journal of Hygiene.

THE CLOCK AND JACK.

"Why is it that I'm like the clock?"
Says little Jack to me,
"Because I've two hands and a face,
As any one can see."

The difference 'twixt the clock and Jack
Is quite as plainly seen,
(I wish they were alike in this)
Its face and hands are clean.

—Helen Standish Perkins.

Kittie's mamma gave her an allowance of ten cents a week, and told her to keep an account of how it was spent.

"You put 'Received' on one side, don't you," Kittie asked, "and 'Deceived' on the other?"

Mother—"Dear me, Bobby! Your teacher tells me you stood at the foot of your class this month."

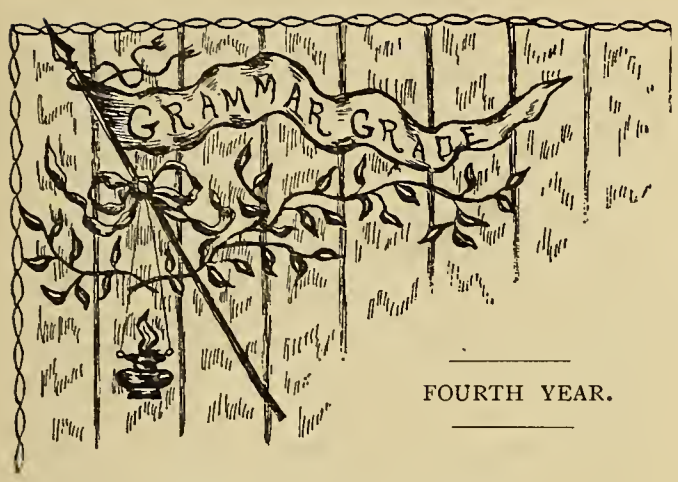
Bobby (blubbering)—"Well, that ain't my fault. They've taken Tommy Tuffnut out and sent him to the reform school."—[Judge.

EARLY SPRING.

O trees, all a-throb and a-quiver
With the stirring pulse of the spring,
Your tops so misty against the blue,
With the buds where the green not yet looks through,
I know the beauty the days will bring,
But your cloudy tops are a wonderful thing!

I can feel the delicate pulses
That stir in each restless fold
Of leaflets and bunches of blossoms,
The life that never grows old.
Yet wait, ah wait, though they woo you
The sun, the rain-drops, the breeze;
Break not too soon into verdure,
O misty beautiful trees!

—Anna Callender Brackett.



FOURTH YEAR.

EXERCISE AND REST.

IT has long been the boast of New England that her rocky hillsides produce not crops but men. The bracing air of a northern climate, and above all the strenuous efforts required to wrest a living from an unresponsive soil developed the sturdy men and women who shaped the early history of this country. Their descendants, confronted by the exacting demands of an ever broadening civilization and shut off from the daily contact with nature which gave their fathers strength, are in danger of finding that virtue has gone out of them. It takes more wisdom, more skill, more vitality to play well one's part nowadays, than was dreamed of a generation ago. We must accept the situation and adapt the training of our children to it. Our public schools are not intended to produce literary prodigies or monstrosities in athletes, but men and women equipped in body, mind and soul, to earn their own fortunes and solve the problems of the world.

Teachers must secure the help of parents in working for the health of the child. There is more danger to young constitutions in late hours and a multiplicity of outside interests than in overstudy, and this danger can be avoided only by the coöperation of the family.

The average college student has better health when he leaves his alma mater than when he enters college, because during these four years he has learned how to care for his health. A thorough physical examination shows what parts of his body are weak and exactly what training is needed to strengthen them. His food is adapted in quality and amount to furnish the nourishment he requires. It is not too much to expect the same results of primary and secondary schools; they too must leave the child in better health than they found him, or rank as failures in one of the great essentials of their existence.

The public schools are perhaps America's most precious institution and she has the right to look to them for great results. Let us, as teachers, live up to this great trust and return to our country the sons and daughters of which she stands in need, strengthened and ennobled by the training they have received at our hands.

VALUE OF EXERCISE.

Find how many in the class have been to a circus and watched the performances of an acrobat or of trained animals. Ask them to describe the feats of strength and agility which they saw there. What is the reason that these performers can do things which ordinary people can not? Were they born skilful and dextrous? Lead the class to decide what parts of the body are most highly developed in such cases. What kind of muscles have they? How did they get them? Lead the class to consider in the same way experts in other lines and to think how they became such. What people have they seen who were skillful in the use of their hands? The most expert operators on the typewriter have no more fingers than any one else, how is it that they can use their machines so much more rapidly than people without experience? The hands of dressmakers and milliners look like those of other people, why can they make a dress or trim a hat quickly and without waste of material, while a cook or a laundress would probably make a botch of the same work?

Bring forward similar illustrations until all understand that the difference between trained muscles and those which are untrained is largely due to practice and exercise. The boys who can run fastest are usually those who like to run and who have made their leg muscles strong by constant exercise. The best skaters are those who began to skate when they were little children and practiced on every bit of ice they came to. General Grant was one of the finest horsemen in the country, and he could ride as well as a circus performer before he was in his teens, sometimes even standing on the horse's back while the animal was at full gallop.

Compare the size and strength of draught horses with that of those used for light driving. Which have larger bones and more powerful muscles? Which can travel faster? Which can do more work? How have the different kinds of exercise they have received helped to change their size and working power?

If any in the class are familiar with country life let them explain how the farmer fattens cattle or poultry for the market. Does he allow them much or little exercise? Which is in better condition for work, a fat horse or one with little fat and much muscle? How can the farmer change fat to muscle? Which is more healthful?

Compare hens and turkeys with wild birds of about the same size, such as the hawk and eagle. Which can fly faster and farther? Which have stronger wings? In which is the flesh more tender and better suited for food? What makes the difference? Which gets more

exercise? Select animals which the class have seen for further comparison, choosing those similar in size but varying in strength, such as dogs and swine, deer and sheep, cows and buffalos. Which of these exercise much? Which little? Which are fatter and slower in their movements? Which are more wiry and muscular?

Give a text-book lesson on the effects of exercise upon the different parts of the body, assigning bones to one pupil, muscles to another, joints to a third, the nervous system to several perhaps, the skin, heart, lungs and digestive organs to others. Ask them to find how exercise affects the growth and size of these parts, and their power to do their work well and quickly. How differently do we breathe after a brisk run? Why do we feel hungry after exercise? Why do growing boys and girls need a great deal to eat? Why are we warmest after working or exercising? How does this fact show that exercise makes the heart beat more quickly and the blood flow faster through our bodies? How does plenty of exercise change the color of the face and give one a bright clear complexion?

Another forceful way of showing the need of exercise is to call attention to the state of things which occurs when any part of the body has to do without it. There are fish living in the waters of the Mammoth Cave in Kentucky. Have the class find in what respect they differ from fish which live in the light; then think of reasons why these are without eyes. Ask them to name an animal which has no eyes. Where does the mole live? Why has he lost his power to see?

Contrast a mowing-machine left idle in a field with one used every day. How does constant use help to keep machinery in good running order? Why will a house last longer if it is occupied all the time than if it stands empty?

Find if any in the class have ever broken a bone. Why is there so little strength in such limbs when we are able to use them again? How do we get more? Why is it such hard work to begin study after the long summer vacation?

How is the brain exercised? Why is it easier for the student to learn a lesson than for an idle pupil? What people have most brain power and are able to do most and best thinking? How can every one strengthen his own mind? What parts of the body do we want to have grow and develop? What powers of mind and thought do we want to encourage? What expressions do we want people to see on our faces? How can we get them?

Sum up work on this topic by getting sentence answers from the class showing the value of exercise on the different parts of the body, on growth, on health and vigor, on working ability and on the development of skill in any occupation.

KINDS OF EXERCISE.

Find what kinds of exercise your class have had to-day. Write each on the board as it is recalled until a long list results. Ask all to copy this, arranging it under the headings work, play and study.

Consider with the class all forms of work which your pupils are familiar with, especially work which they themselves have done. What parts of the body are exercised in each case? Are any parts getting too little? Get them to think of and suggest substitutes which will develop the whole body instead of a part.

Everybody knows that this is a busy world and that it is the duty of all to help by doing some kind of work. Put on the board for the class to think about the question, Is work good or bad for people? Before answering ask them to contrast idle children with those brought up to be industrious. Which as a rule have the better time? Which usually plan the games and take the lead in sports? Which are happier and more contented? Contrast also the idle poor, tramps and beggars, with people who work regularly. Which are stronger and live to a greater age, as a rule? Which are respected and sought after as citizens? Which help to fill jails and prisons?

Ask the class to name some of the different kinds of work carried on in their homes, town or city. Why is each necessary? What are the leading occupations in this country? What kind of men and women do they develop?

Get from the class a list of the games and sports which each likes best. Then help them to decide how each strengthens the body and helps it grow. How many ride a wheel? Why is it good exercise? What parts of the body does it call into action? Is "scorching" a healthful practice? How is it harmful? What position should one take while riding?

How does swimming develop the body? Where do we first feel tired after rowing? What parts of the body does it exercise? Why is walking a good form of exercise? What muscles does it develop? How far can you walk before feeling tired? How should we dress to get the most good from any kind of exercise?

What part of the body does not get exercise enough from either work or play? Why is study or mental work of some kind necessary for every one? Have the class compare their own progress in reading or arithmetic with that of classes just beginning; then with that of pupils ahead of them, and notice how much their brain power has increased already, also how much more there is still for them to learn.

How many remember when they were learning to write or draw? They had to think of pen, paper, how to make each letter, or line, and the best they could do was far from the copy. Now they write much more easily and

their drawings are often excellent. What has this exercise done for the brain?

Ask each one to bring into class a picture of the finest-looking man he can find, one whom he would like to resemble. Have them passed about for all to look at. Discuss them with the class. Call attention to the fact that these are pictures of well-developed persons; that both sides of the body are of the same size, showing that the left hand and foot have been used as much as the right, while the head and face show thought, culture and refinement. Notice whether there is anything in any of the pictures which we do not like. Do any parts look undeveloped? How might these have been improved, judging from the pictures? What kind of exercise do you think each of these persons had most of? Which least?

NEED OF REST.

Regular periods of rest are as necessary to health as any form of exercise, and should be as strongly insisted on. Give the children reasons why they must retire at the same hour every night, and in most cases they will cease to chafe at the regulation.

Ask the class to give an example of perpetual motion? Do they know of a machine which will go forever without stopping? What do we have to do to keep our clocks and watches running? Why do trainmen have to change engines during a long run? Why can we not drive the same horse all day without giving him a chance to rest?

"Fair Spring is near;
The sunshine is her smile, the gentle rain
Her falling tear."

Call for descriptions of some familiar park or garden as it looks in summer, and again in the winter. Why is not the grass always fresh and green? Why do the leaves fall from the trees in autumn? Why do flowers and plants cease growing during a part of the year? Can you think of anything which is constantly growing or in motion? Why is rest needed? Can we get along without it? Why not? Why does it rest us to play after we have been working or studying? Why is it easier to study after recess than before? Is change of work always restful? Why is it not rest enough?

Get from the class one or more reasons why everybody must have a certain amount of sleep every twenty-four hours. What parts of the body rest during sleep?

Talk over with your pupils ways in which one can get the most good from his sleep. Why should the shutters be closed in our sleeping-rooms at night, especially if the room faces the east? Why do we need open windows and a constant supply of pure air? Why do we need more clothing in the night than during the day? Why is it easier to get a good night's sleep in the country than in the city? Why can we sleep better at night than in the daytime? Why can we not sleep well if we are hungry? Why is it unhealthful to eat heartily just before going to bed?

Many illustrations can be brought forward to show the need of plenty of sleep at regular hours. Have the class find how much sleep Napoleon allowed himself. How old did he live to be? Contrast his life in this respect with that of Gladstone. Which had more regular habits and the better health? Bring out reasons why it is more important for children and young people to go to bed early and allow themselves plenty of sleep, than for older persons. Show, for instance, that a young plant is much more tender and grows more rapidly than a large tree. It can not live so long without water and it withers more quickly in the hot sun. Ask the class to decide whether the same is true of children. How does their growth compare with that of older people? Their need of food, water, exercise and rest? How many hours of sleep is necessary for them? Why is sleep in the early part of the night of most value?

In reviewing the lessons on exercise and rest, leave with your pupils the central thought that health is not a matter of luck. We do not happen to be good students in arithmetic. We get our knowledge of numbers by studying them. Neither do we keep well and strong by accident. We must study the laws of health and make them the rule of our lives if we would have our days long in the land.

The building of a beautiful character and a physically strong body is the most essential part of education.—[Medical Record.

AUTHORITATIVE QUOTATIONS.

PLAY A NECESSARY PART OF EXERCISE.

The play impulse, deeply implanted in the race, is one of the motor activities evolved from the central nervous system, and many of its manifestations are not only essential parts of life, but make life worth living.—[Journal American Med. Association.

EXERCISE GIVES VIGOR.

The healthy exercise of the physical powers is one of the necessary pastimes of a manly and vigorous race, and next to food and sleep athletics has the largest share in the recreation of human life and in counteracting the tendencies of this hyper-neurotic age.—J. Clark Slay, M.D.

Proper exercise tends in every way to increase nutrition and to a greater growth, while over-exercise tends in the opposite direction.—[Journal American Med. Association.

EXERCISE PROMOTES CIRCULATION.

Use, exercise, movement, are Nature's means of recuperation, as well as of growth. There is no surer or quicker way of flooding the cells and capillaries with the blood from the trunk, and producing full, natural oxidation or heat in cold and benumbed fingers, than by vigorously swinging, oscillating the arms, and whipping the hands against the body.—[Dietetic and Hygienic Gazette.

NEED OF SLEEP.

We are vitalized and refreshed during sleep. During the growth and development of the young man's body, at least eight hours' sleep is necessary, and it should be started at 9 p. m. The sleep train should be started promptly on time and have the right of way. Convince me what a young man eats and drinks, how he spends his evenings and what books he reads, and I will convince you what music, if any, he will ultimately make in the grand orchestra of life.—Joseph Eastman, M.D., LL.D.

The brain requires regular sleep and food, but especially sleep. Dogs, which can live for twenty days without food, can not live more than five days without sleep. Man's limit of endurance without sleep is estimated at ten days.—[Journal American Medical Association.

NARCOTICS OPPOSED TO HEALTH.

He who desires the supreme vigor of health can have no use for alcohol, tea, coffee or tobacco. With pure water, well-chosen, wholesome food, the exclusion of all narcotics, and clean habits, together with our bracing climate and active pursuits, and the intermixture of the most enterprising races of the world, the American people should develop into the highest type of individual, family and national life.—Chas. H. Shepard, M.D.

USE OF ALCOHOL AN ABUSE.

The moderate use of alcohol can only be gradually and quite incompletely separated from its misuse. The use of a social poison is in itself an abuse. Hardly any drunkard wishes to be or become such. Imperceptibly and unconsciously he is led into it by the weakness of his own brain and the example of others. Every glass lessens his power of reasoning and resistance; not he himself, but the general drinking public are, in his opinion, guilty of and responsible for his drunkenness.—August Forel, M.D.

NARCOTICS IMPAIR VITALITY.

Such narcotics as opium, cocaine and tobacco, by lessening the sensibilities of the nervous structures, correspondingly lessen muscular activity both voluntary and involuntary, and thereby lessen the depth and frequency of respiration. Consequently, the individual who uses any one of these agents, even within the limits of so-called moderation, from day to day, through months and years, inevitably dulls his nervous energy, uses a less amount of oxygen, and slowly but surely impairs the vital properties of his tissues and invites an early old age.—N. S. Davis, M.D., LL.D., F. R. S.

Injuries always follow the use of alcohol in children.—T. D. Crothers, M.D.

ALCOHOL INCREASES FATIGUE.

Unconscious experiments on a large scale in many ways have shown that alcohol increases muscular fatigue and lessens power of endurance; in the same way experience has proved that no work requiring accuracy and steadiness or brain and nerve force can be done well under the use of alcohol—T. D. Crothers, M.D.

ALCOHOL ALWAYS A DECEIVER.

Alcohol promises pleasure; but instead of the true pleasure, happiness, and contentment which comes from a life of sobriety and uprightness, it gives a mere transient tickle of the palate, a thrill to the nerves, a momentary exhilaration and with it the bitterness of a ruined life, loss of friends, home, property, a wrecked body, premature death, disgrace and misery.—J. H. Kellogg, M.D.

"Like a frolicsome lion March comes with a roar,
And stirs up the weather as never before.
But the days of old winter are passing away;
His breath becomes feeble; he stops in his play.
The brooklets are melting, the winds cease to blow,
And the trailing arbutus peeps out from the snow,
While far in the distance the bobolinks sing—
'Tis the winter's good-by and the greeting of spring."

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" O the wind is a faun in the springtime
When the ways are green for the tread of the May;
List! hark his lay! Whist! mark his play!
T-r-r-r-l! Hear how gay!"

ALCOHOL AS A FOOD.

THE whole agitation over the alleged statement of Professor Atwater, that alcohol is a food, and that therefore the teachings of the physiologic text-books to the contrary are incorrect, depends on the signification of the word "food." If it means anything that is oxidized and used up to any extent in the human body, it will include a very great many unwholesome and unpleasant substances besides alcohol. A man could support life on carrion, for example, and there are other substances that, while they are eminently oxidizable, are yet so disturbing to the general equilibrium of the organism that their ingestion is very unadvisable. The action of alcohol on the general metabolism may not be all included when we say it is consumed in the system and supplies heat and energy. It may be simply a case of very small gain at very large expense. There are many substances that are nutritious in a sense, but have a way of so interfering with the important functions, sometimes vital ones, as to be disastrous in their effects. There are many actively toxic substances that can be oxidized in the animal body and yield energy to a certain extent, and thus meet the technical definition of food. The food value of alcohol is insignificant at the best, and it is not taken for its nourishing but its neurotic properties. If these latter are in any way inimical to human welfare, it is a very small matter that a couple of ounces be assimilated, and one that has no practical bearing on the temperance question. The school text-books may require some slight alteration, but that is something that has to be done so frequently that it ought to give no concern. Neither the temperance advocates nor their opponents should lay such stress on such unimportant technical questions which really have no bearing on the main problems of the dangers and uses of alcohol.—[Jour. Am. Med. Ass'n.

UNFAIR DISCRIMINATION.

"NO book perfect at first was ever published," said a member of a large schoolbook firm. "Teachers are constantly questioning statements of fact, of construction, or something else in every book we publish. We keep a small army of men constantly at work verifying or correcting these points."

But nobody demands that the study of arithmetic, for instance, shall be taken out of the schools because somebody thinks he has found a flaw in a text-book on that topic. Such a demand touching temperance physiology is only a form of opposition to the study.

The man who has never read the books and who knows least about the subject has shouted "inaccuracy" the loudest. It would be hard to find more ignorance to the square inch than is generally represented by this hysterical cry against the accuracy of these text-books which are forewarning the children of this country against habits that have led hundreds of thousands to ruin in the past. Mere assertion proves nothing, but when any one can show that the experimental research which these books represent is inaccurate, we shall gladly use our influence to have them revised accordingly.

From many sources the assurance comes to me that all opposition will cease if I will only consent to the teaching being taken out of the text-books that alcohol is a poison and not a food, as though the power to do this rested with me. If it is not true that alcohol is a poison and not a food, statements to that effect should be taken out of the books. But, as I understand testimony, according to the accepted meaning of the words food and poison, no one has yet proved the great scientists in error who class alcohol as a poison, and not a food. No juggling with definitions will change the narcotic power of alcohol when taken even in small quantities to create an uncontrollable and destructive appetite for more. The occasional and moderate drinker may not like this truth; the traffic in these drinks may object to its wares being thus characterized; the man not up in all the latest research may doubt; but there stands Truth, and it points to alcohol classed by science and experience under the death's head and cross-bones, while history, echoing the charge, points to dishonored graves, degeneracy, crime, and desolation, the outcome of the delusion that alcohol is a food.

The children of this nation are entitled to the utmost warning warranted by truth against the alcoholic and other narcotic foes which have slain more than sword, famine, and pestilence, and for that utmost warning for them, regardless of opposition, I stand, and, having done all, stand. "Ich kann nicht anders."

THE PASSING OF ALCOHOL.

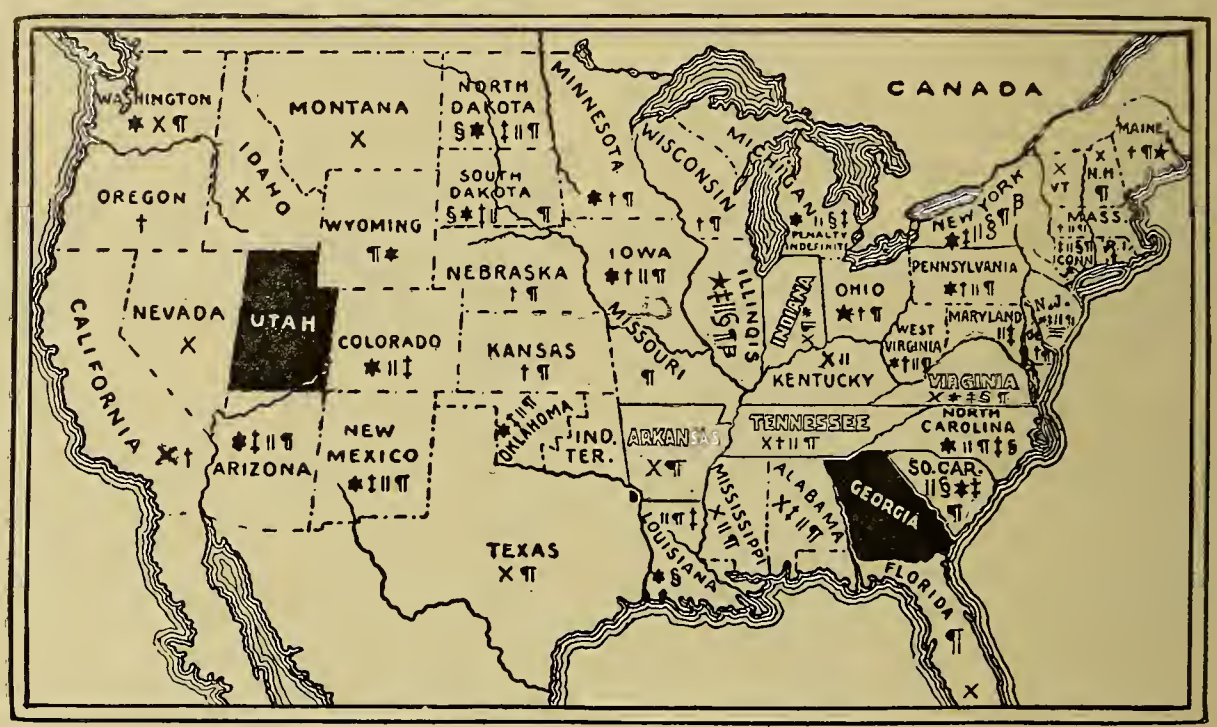
THE great events which have revolutionized the world have been results of invisible changes quietly taking place in human thought. Change the thinking of a people and you will change their history, for men are ruled by ideas and sentiments.

A change in the drinking customs of a state must be preceded by a change in the ideas of its people as to the desirability of the drink. Therefore, the enactment in a state law making hygiene, or the laws of health including those which relate to the use of alcoholic drinks and other narcotics, together with related physiology, a compulsory public school study, provides for the ultimate overthrow of alcohol in that state. For the truth concerning the nature and effects of alcohol and other narcotics lodged in the minds of the childhood of a state means their sure preëmption for intelligent sobriety.

Virginia, the mother of states and of presidents, has just passed a temperance education law of this character, the forty-third state in this country which, together with the National Congress, has provided for the study of scientific or physiological temperance by all pupils in all her public schools.

Pen with which the Governor of Virginia signed the Temperance Education Law of that State.

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES.



States in White have a Temperance Education Law. Those in Black have NONE.

EXPLANATION OF MARKS.—× The cross signifies that Scientific Temperance is a mandatory study in public schools.

* The star signifies that this is a mandatory study and that a penalty is attached to the enforcing clause of this statute in the state or territory to which it is affixed.

† The dagger signifies that the study is not only mandatory but is required of all pupils in all schools.

‡ The double dagger signifies that the study is required of all pupils in all schools and is to be pursued with text-books in the hands of pupils able to read.

‖ The parallel indicates that the study is to be taught in the same manner and as thoroughly as other required branches.

§ The section mark indicates that text-books on this topic used in primary and intermediate schools must give one-fourth or one-fifth their space to temperance matter, and those used in high schools not less than twenty pages.

¶ The paragraph indicates that no teacher who has not passed a satisfactory examination in this subject is granted a certificate or authorized to teach.

≡ Three lines indicate that text-books on this topic shall give full and adequate space to the temperance matter.

β The beta signifies that a definite number of lessons for each school year has been made compulsory.

There are 16,000,000 children of school age in the United States under Temperance Education laws.

While the bill was pending, one of the speakers on this subject, a prominent Virginia clergyman, eulogized the author and leader of this movement as "a woman of profound wisdom," and further said: "The story of the struggles and triumphs in pushing this great scheme will make one of the most thrilling chapters in American history. A few days ago

I read an outline of this work and the conviction flashed through my soul like a revelation from the third heaven that here, at last, was a movement conceived and put into operation in comparison with which all other schemes of temperance reform fade into insignificance, and one which is destined to deliver this country from its blackest and most direful curse."

Governor Taylor has kindly sent to Mrs. Hunt the pen with which he signed this Virginia law, to be placed with the pens in her possession with which the President of the United States, the governors of other states, and the governors of Canadian provinces have signed similar laws. These pens mean more to the future of the American people than the famous one with which the immortal Lincoln signed the Emancipation Proclamation, or those with which the Declaration of Independence was signed, for temperance education laws mean the passing of the greatest and most universal of all forms of bondage which have enslaved the human race. As our readers will see from the accompanying map, only two states in all our vast country, Utah and Georgia, are yet to be won before this form of education will be compulsory for all children who are to be the coming men and women of the United States. The temperance reform is harnessed to the schoolhouses and schoolchildren of the country, and as surely as ideas influence action, so surely, as these children grow up, will the dominion of alcohol be overthrown.

There is a marked awakening among the German-speaking peoples on the subject of alcoholism. Under the lead of professors and physicians a strong effort is made to put temperance on a scientific basis. The movement in favor of total abstinence is significant because it is affecting not only Germans, but also other nationalities heretofore regarded as either indifferent to the subject of alcoholism or else positively advocating moderate drinking. In other words, the movement is international. It is by no means dominant as yet, but it is constantly growing. In no class has it the majority; its force consists in the science, the character, and the determination which are back of it.—J. H. W. STUCKENBERG.

"Slow buds the pink dawn like a rose
From out night's gray and cloudy sheath;
Softly and still it grows and grows,
Petal by petal, leaf by leaf."

Mr. Wise: "Johnny, can you tell me why the little hand on my watch goes so much faster than the big one?"

Johnny (after mature reflection): "Papa, ain't it just like why I have to run when I go walking with you?"

WHAT IS A POISON?

A FRENCHMAN'S VIEW.

THE question whether alcohol is a poison or not is not confined to this country. The following is the opinion recently expressed by H. Preisig in a recent issue of *L'Abstinence:*

"Many people are greatly surprised and indignant to hear alcohol called a poison. I read in a Vandois journal that 'science has not yet demonstrated alcohol to be a poison.' This singular naivete arises, I think, from a peculiar idea of what constitutes a poison. It is easy to regard as a poison such a substance as in infinitely small doses has overwhelming effects. To many, a poison is one of those terrible substances which were distilled by the wicked sorcerers in the fairy tales, a single drop of which laid upon the tongue of a man killed the unhappy victim in a few seconds. At least the word awakens the idea of prussic acid or of the poison of the Borgias.

"But the idea of a poison has been considerably extended and modified since the happy time of the sorcerers and the fairies. Most modern physiologists give to 'poison' a definition similar to this: substances which introduced into the organism in relatively small quantities exercise upon it an unfavorable action. This may not be very precise, but in any case it is very far removed from those drugs of which a millegramme (the hundredth part of a grain) is sufficient to destroy a whole family.

"Next, I maintain that any one who has ever seen a drunken man must necessarily class alcohol among the poisons, for how can one see anything else in drunkenness than acute poisoning. If the opinion of physiologists upon the question is asked they will tell you that alcohol in its effects is a near relative of ether, chloroform and morphine. Claude Bernard, the great French physiologist, even called alcohol the type of poisons of the nervous system.

"Moreover, a substance may poison without ever having even once produced symptoms of great disturbance. If one absorbs daily a quantity of lead or mercury, more than can be eliminated, as do workmen employed in certain industries, the metal accumulates little by little in the organism and produces, when a sufficient quantity has accumulated, the symptoms of chronic poisoning. The same is true of alcohol. One may completely alcoholize himself, all physicians will tell you, without being a drunkard, by imbibing regularly larger doses of alcohol than can be eliminated.

"There is no occasion therefore to be astonished beyond measure if our scientists do not break their heads to demonstrate that alcohol is a poison. It is to them a truth long since admitted."

THE BUILDING OF A NATION.

VI. A NATION AMONG NATIONS.

OUR first century closes with the process of consolidating the American people into a unit just accomplished, and quick upon the stroke of that hour presses upon us our world opportunity, world duty and world glory which none but a people welded into a indivisible nation can achieve or perform. Blind, indeed, is he who sees not the hand of God in events so vast, so harmonious, so benign. — SENATOR BEVERIDGE.

While through growth and strife and reconciliation the different elements of the nation were being welded into a unified whole, the United States was coming also to its appointed place in the community of nations.

The weak and irresponsible government of the Confederation from 1783–1789 could not command the respect of other nations. The country was heavily in debt, which some of the states were anxious to repudiate. It was useless to send ambassadors or attempt to make treaties with a government which could not fulfil its agreements. Sturdy John Adams said: "Our country has broken her faith with the nations and with her own citizens. She must become strictly honest and punctual before the whole world, before she can recover the confidence of anybody abroad."

It was not until after the Constitution had been adopted and the solid foundations of a nation laid by the measures of Washington and Hamilton, that America in any sense began to be recognized by other governments as one among themselves.

The wisdom of Washington saw that the young nation must be free to develop its great resources and powers; that this work would give it plenty to do without wasting time and strength participating in the affairs of its neighbors across the sea. In his memorable Farewell Address, he earnestly advised that the United States should not ally itself either for or against any foreign power; that it should "observe good faith and justice to all nations, cultivate peace and harmony with all."

It was no weak or selfish policy that Washington advised. Before the United States could be a power, it must have power within itself. This could not be attained if its strength was to be sapped continually by taking part in European politics. Washington's advice became one of the corner-stones of our foreign policy, and a century of experience based upon it has confirmed its wisdom. Friendly to all in time of peace, neutral in war amid the shifting scenes of government on the stage of European politics, the United States has had hands free to work out its own fortunes, to follow its own destiny, until in its isolation it has become strong among nations in material and moral power.

The sincerity of the government in its adoption of the principle of neutrality was shown in the turbulent years preceding the war of 1812. As neutral, it claimed the right to trade with both France and England then at war, and straightway saw its commerce ground between the upper and the nether mill-stone. What France left, Great Britain seized. The impressment of Americans by British captains into the British navy aggravated the ill-feeling between Great Britain and the United States. In its desire to preserve peace the American government showed a lack of resolution in asserting its rights which doubtless encouraged both French and English to greater depredations. Finally, the national spirit and pride stung at last to action turned to war as the only resource.

The war of 1812 did not settle specifically a single one of the questions that had caused it. The conditions in Europe out of which the questions arose had passed away, and in view of the military and naval strength shown by the United States it was hardly likely that previous offences would be repeated. The war had shown that the United States was emerging from its first years of weakness and uncertainty, and henceforth must be reckoned among the world's forces.

It was partly this, partly the Washington policy of standing aloof from European affairs, that eight years after the close of the war gave force to the announcement of the Monroe Doctrine which has become a second fundamental principle in the foreign policy of the United States.

The sovereigns of Russia, Prussia and Austria had formed what was known as the Holy Alliance, to uphold absolute monarchy and suppress republican government. Spain's American colonies had revolted. There was reason to fear that the Holy Alliance intended to help subdue these colonies, and in this case there was danger that the South American countries would be divided among European powers. President Monroe, therefore, in his message of 1823, announced that European interference in the politics of North or South American countries would be considered the "manifestation of an unfriendly spirit toward the United States;" that the people of the United States had held aloof from European politics, and asked only in return that North and South America should likewise be let alone.

Thus, while incidentally protecting itself from the annoyances which might result from the constant encroachment of nations trying to secure control of the countries in this hemisphere, the United States also stepped boldly into the arena of international politics as the

defender of American nations seeking or desiring freedom and independence.

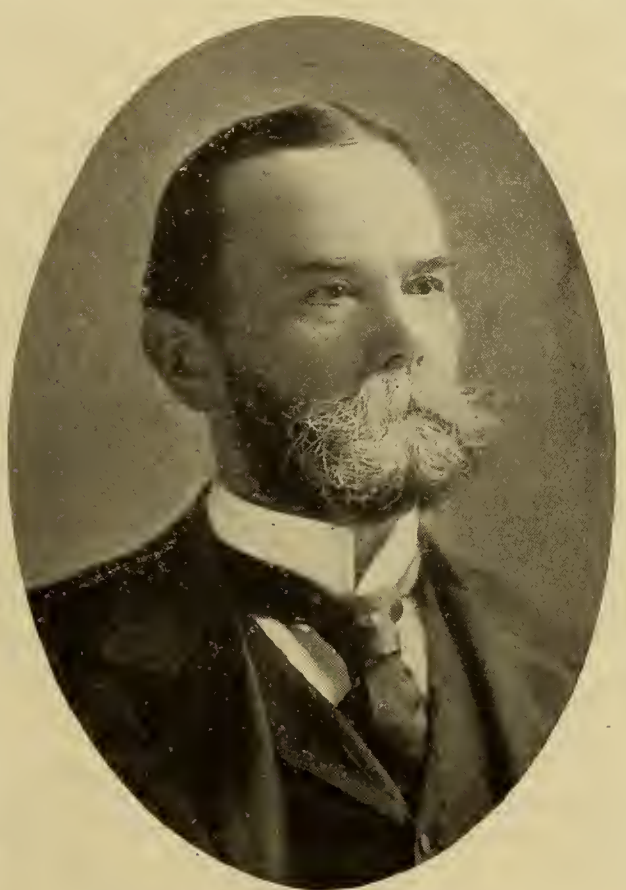
A notable application of this principle was made in the case of Mexico. During the Civil War the French government, caring not a whit for the Monroe Doctrine because the United States was distracted at home, and regardless of American protests, set up an imperial government in Mexico. No sooner was the war over than the United States informed the French emperor that it would be "inconvenient for him, gravely inconvenient, if the French troops were not withdrawn from Mexico immediately," and at the same time a recently victorious American general made a significant movement with his army toward Mexico. The French promptly withdrew, leaving the unfortunate emperor, Maximilian, whom they had set up, to his fate, and the Mexicans free to re-establish a republican government.

More than once has the Monroe Doctrine been called up in behalf of struggling Central and South American states, until it has become recognized by other nations as a settled fact in American policy.

But not only has the United States stood for non-interference with the nations of this hemisphere. It has stood also for the political freedom of individuals who have come to us from foreign countries. Germany, for instance, had always claimed that "once a German, always a German." Hence, a German emigrant returning to his native land after living in the United States for a number of years was still liable to be drafted into the German army. Great Britain held to the same view, as had been shown in the war of 1812 when it seized Englishmen found on American vessels. The United States, however, always insisted on the right of a citizen to abandon his native land and become a citizen of another country. This was called expatriation. In 1868, Germany, and two years later, England, by treaty admitted this right which since that time has become general among nations.

Out of the Civil War grew the claims for damages upon Great Britain for the carelessness of that country in allowing Confederate vessels to sail from her ports. Negotiations long failed. Feeling grew bitter, even warlike. Finally both countries agreed to submit the matter to arbitration. One representative each was chosen by Great Britain and the United States, one was appointed by the King of Italy, one by the ruler of Switzerland and one by the Emperor of Brazil. This committee considered the case and reported in favor of the United States.

About the same time both countries also agreed to leave to the Emperor of Germany the decision of a boundary between United States and British America. Thus England and America set an example which is being followed more and more by other governments, of settling serious disputes between nations without war.



John Hay.

In the great World's Peace Congress held at The Hague in the summer of 1899, the delegates from the United States bore a leading and an honorable part, and were especially influential in the plans made for a general system of arbitration. Provisions were made for a standing Committee of Inquiry before whom all nations signing the agreements may lay their questions under dispute and ask for advice. There is also a Committee of Arbitration to whom nations may agree to refer their differences and to abide by its decision. While war may not yet cease from off the earth for many years, these provisions are paving the way for the coming of peace, and to England and America and their earnest efforts in behalf of arbitration as a means of peace belong the highest credit. What the future may hold was well expressed by the French statesman, M. De Stael, at the close of the conference:

"The good seed is sown; may the harvest soon come. As for me who have arrived at the closing years of my life, I hold it a supreme consolation to see open up new perspectives for the good of humanity and to be able to see clearly into the brightness of the future."

The United States has insisted upon the right of American countries to develop without European interference, and in addition it has itself taken a hand in securing freedom to them.

Every boy and girl thinks with just pride of the self-sacrifice and devotion so freely poured out in the cause of liberty by our nation in the late war with Spain. The results to the freed Spanish colonies have been great, but to the United States itself have come with the conditions of the war increased responsiblities in the "family of nations." Suddenly, almost without warning, it has found its possibilities of influence and its world responsibilities widened.

Senator Platt of Connecticut spoke wisely when he said recently: "To be truly great, a man or a nation must be truly helpful. Every man owes something to the community in which he lives, and every nation owes something to the world of which it is a part."

With the strength to fulfil its mission in the wider development of the world, has come to the United States a sense of its obligations, and to other nations a recognition of our destiny. The history of international relations during the past twelve months alone, under the skilful leadership of Secretary of State John Hay, shows to what a position of trust and of leadership America has come.

In China, Secretary Hay has secured what European diplomacy had long failed to obtain, the right of all nations to trade under the same conditions, whatever political arrangements may be made by the empire. The value of trade in China has been recognized by all European powers. Each saw no way to hold its own portion without possessing as much as possible of Chinese territory. The agreement made by the United States with these powers gives freedom to all in trade, protection to each and removes the dread of interference from one another. With the motive for the seizure of territory in China gone, China itself has an opportunity to develop along its own peculiar lines, though that development can not fail to be influenced by contact with Western thought and civilization. In securing this opportunity for China, and in removing the causes for jealousy existing there among other nations, America has shown that its policy will make for peace not war, for justice and equality among nations as well as among men.

With its new power has come to the United States an increased sense of the necessity of being in close touch with all parts of the earth. Already the Atlantic is threaded with the cables that make us neighbors of our friends across the sea. As the men-of-war and the men of peace cross the broad Pacific we realize that with Eastern countries too there must be ready means of communication. The long, anxious passage of the battle-ship "Oregon" from the Pacific to the Atlantic coasts showed more clearly than ever before the importance of a shorter route across the isthmus separating the two American continents.

Fifty years ago Great Britain and the United States, by the Clayton-Bulwer treaty, agreed that a canal between the Atlantic and Pacific might be constructed to be under their mutual control and protection. But because of mutual distrust, and because some of the clauses of the treaty were obscure in meaning, this new ship highway has never been completed.

In the revelation of the true fraternity existing between Great Britain and America which came with the Spanish war, it has been possible for the two nations to put aside old jealousies and distrust, and in the treaty just completed by Secretary Hay and Sir Julian Pauncefote to plan for the needed canal on a broader basis than before. By the provisions of this treaty the canal may be built and managed entirely by the United States government, but is to be free to the use of all nations in peace or in war. All other great powers are asked to join Great Britain and the United States in carrying out these conditions. Some one has said lately: "Manila, by the scoop of a spade, is to be brought thousands of miles nearer New York." The Hay-Pauncefote treaty is a token of progress, not to us alone, but to all nations, as it unites them in support of common aims.

It can not be said that the policy of America among nations has been or is above criticism. The hands that have shaped her destinies have not been free from human weakness. But to the general principles of freedom and justice to all men and to all peoples she has on the whole been grandly true, and every act that helps to put away ill-will between nations, or to widen their mutual sympathies, hastens the day of universal peace and an international brotherhood.

"Tommy," said a father to his precocious five-year-old son and heir, "your mother tells me she gives you pennies to be good. Do you think that is right?"

"Of course it is," replied Tommy. "You certainly don't want me to grow up and be good for nothing, do you?"

Obedience to rightful authority is the first requisite of good citizenship. Therein lies the safety of any government. Somewhere the citizen must learn respect for law. Some learn it early in life, at home; some later, at school; some still later, at the bar of justice. The wise child will learn it by precept; those not so wise must learn it by harsher means. The child that tramples with impunity upon the law of the school will trample later upon the laws of the state; and the teacher who, through cowardice or negligence, allows her authority to be set aside by that child, is unworthy of the trust reposed in her by the state, and is a menace to the welfare of society.—H. W. Jones.

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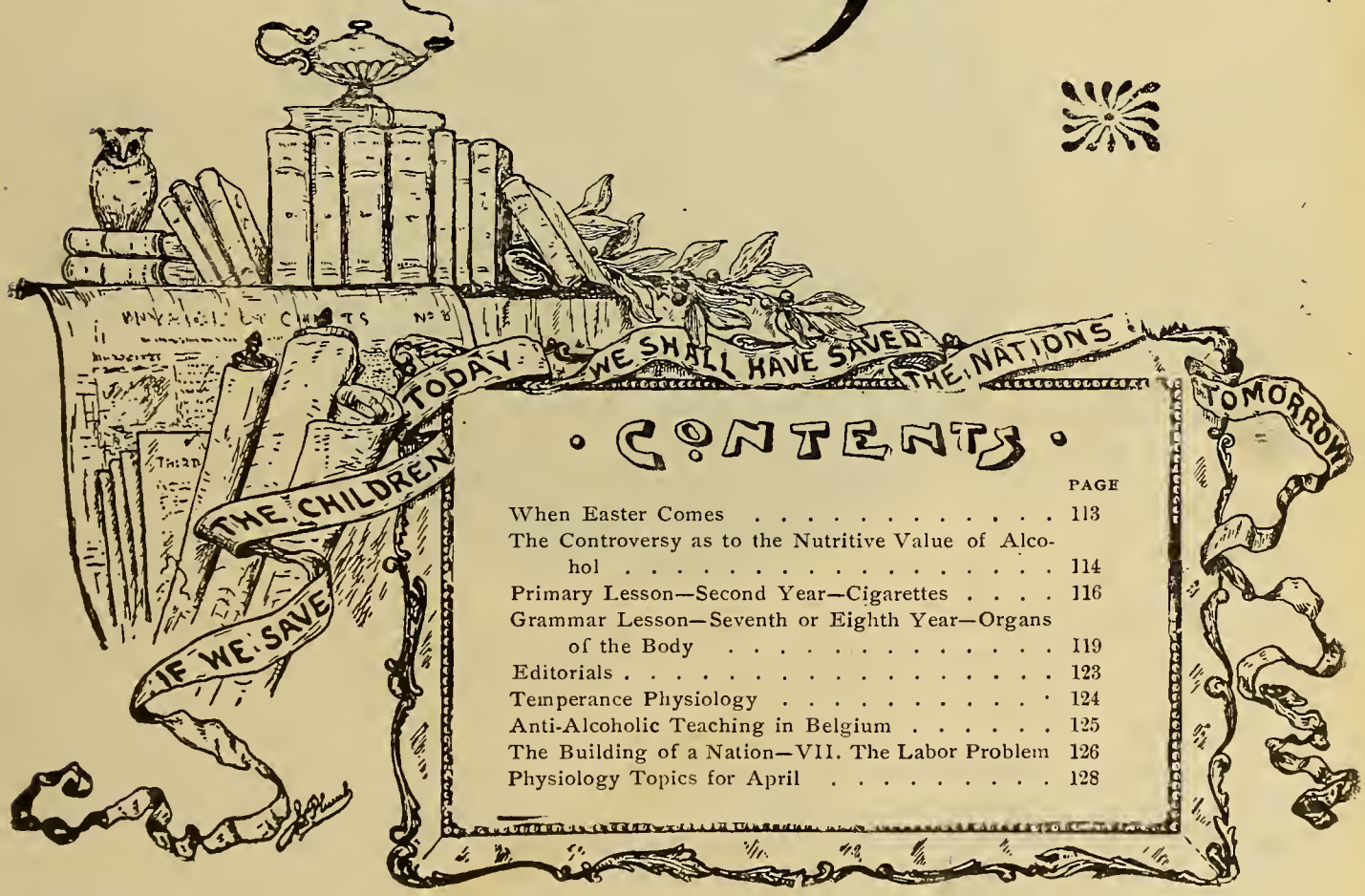

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—BY—

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School Physiology Journal

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WHEN EASTER COMES.

When Easter comes the violets lift
Their shyly hooded faces,
Where late the frozen snows adrift
Heaped high the woodland spaces.

When Easter comes the sunbeams dance
On green leaves all aquiver,
And grasses rally, spear and lance,
By rippling brook and river.

When Easter comes, when Easter comes,
Then winter's spell is over!
Ere long we'll hear the elfin drums
Where bees are deep in clover;

After we catch the swaying lilt
Of winds among the daisies,
And see the rose-cup's sweetness spilt
Among the garden mazes.

When Easter comes, ah! happy day,
E'en tears like dewdrops glisten,
And songs climb up the heaven-ward way
While angels bend to listen.

La Farge.

Adoring Angel.

For love and life and joy untold
Are in the age-long story
That spells itself on harps of gold,
And thrills with endless glory.

—Margaret E. Sangster.

APRIL BUDS.

O little buds, break not so fast!
The spring's but new.
The skies will yet be brighter blue,
And sunny too.

I would you might thus sweetly last
Till this glad season's overpast,
Nor hasten through.

It is so exquisite to feel
The light, warm sun;
To merely know the winter done,
And life begun;

And to my heart no blooms appeal
For tenderness so deep and real,
As any one

Of these first April buds, that hold
The hint of spring's
Rare perfectness that May-time brings.
So take not wings!

O linger, linger, nor unfold
Too swiftly through the mellow mold,
Sweet growing things!

And errant birds and honey-bees
Seek not to wile,
And sun, let not your warmest smile
Quite yet beguile

The young peach boughs and apple trees
To trust their beauty to the breeze;
Wait yet awhile!

—Evaleen Stein.

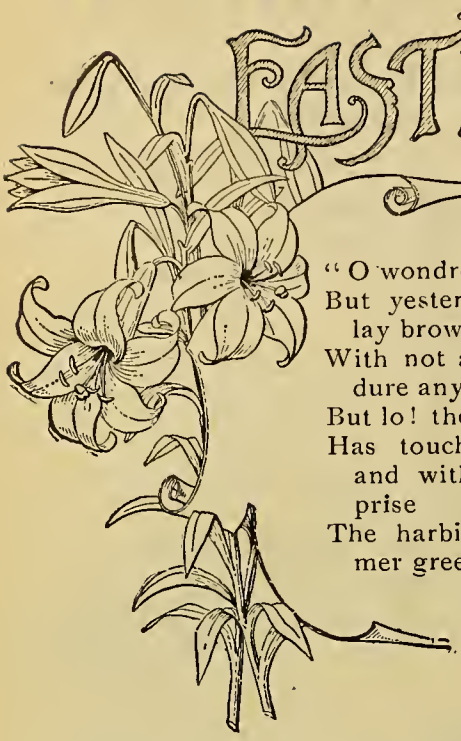
THE SOUTH WIND.

The South Wind softly blows at last;
Rejoice! The winter surely is past.
Chains are broken, river gay,
So laugh, and dance, and sing on your way.

To every flower whispers he,
Awake! Come forth! Be happy with me!
Glad from winterland they rise,
And open wide their wondering eyes.

He kisses every budding bough;
A soft green mist lies over them now;
Birds and blossoms everywhere
Rejoice the balmy air.

—L. N. Kay.



THE CONTROVERSY AS TO THE NUTRITIVE VALUE OF ALCOHOL.

THE results of some recent experiments conducted by Dr. Atwater, of Wesleyan University, upon the nutritive value of alcohol, have awakened anew a vigorous controversy upon one of the important questions of education, the teaching in regard to alcohol in the schools.

Dr. Atwater claims in his published statements that the results of his experiments prove that alcohol is a food, and that therefore the teaching of pulpit and schools that it is not a food is an error, and should be discontinued. The adherents of temperance and of the present method of teaching in regard to alcohol have replied in several letters, and finally by a pamphlet called "An Appeal to Truth," stating that Dr. Atwater's experiments do not prove that alcohol is a food either in the common sense of the term, as understood by people generally and used in books of hygiene, or in the particular sense in which the author uses it, as a food entitled to rank as sugar, starch and fat, and that, therefore, his experiments should have no effect upon the teaching.

The question in dispute in this case is not the actual value of alcohol as a food, but is solely whether or not the conclusions which Dr. Atwater draws from his results are justified by these results.

These conclusions, stated in Circular No. 357, November 6, 1899, (U. S. Department of Agriculture, Division of Publications), are:

(1) That the alcohol was almost completely oxidized in the system.

(2) In the oxidation all of the potential energy of the alcohol burned was transformed into heat or muscular energy.

(3) That the alcohol protected the material of the body from consumption just as effectively as corresponding amounts of sugar, starch or fat.

If we examine the experiments from which these conclusions are deduced, contained in Bulletin No. 69 (Office of Experimental Station, Department of Agriculture), in regard to each of the three conclusions separately, we find that conclusions Nos. 1 and 2 are perfectly tenable and justifiable on the basis of these experiments, but that No. 3 is not thus justifiable. The data given in the bulletin show conclusively that alcohol is oxidized in the body and that the potential energy of this alcohol is transformed to heat or energy of some other kind. It fails, however, to show that the alcohol protects the body materials from consumption equally with sugar or starch or fat. In fact, this data shows an actual loss of nitrogen in the experiments in which alcohol was used, proving a consumption of body material under these conditions. We are thus forced to conclude from an examination of the facts that the authors of "An Appeal to Truth" are correct in their claim that Dr. Atwater's experiments do not justify his statement that alcohol is a food entitled to rank as sugar, starch or fat in its effect in protecting the body materials from consumption. In fact, the experiments as they stand prove the contrary.

Are they justified also in their claim that his experiments fail to justify him in his conclusion that alcohol is a food in the ordinary sense of the term, a conclusion implied in his statements in the report which refer to alcohol "with other food materials?" We think that they are so justified.

The two conclusions in regard to the metabolism of alcohol which Dr. Atwater's experiments did warrant, namely, that alcohol is oxidized in the body, and that the potential energy of the alcohol is there liberated, do not by any means prove that alcohol is a food in the ordinarily accepted sense of the term "food." To demonstrate this fact, it must be proved that the sum total of the effect of the injested alcohol is useful rather than harmful in the maintenance of the animal economy. This Dr. Atwater has not proved. And it has not yet, so far as we know, been demonstrated by any experiments. In fact, the weight of experimental evidence at the present time is decidedly against such an assumption. Thus the experiments made upon large bodies of men under conditions of sustained labor, as those conducted in the English, German and American armies, prove to us that the effects of the use of alcohol, in the amounts ordinarily spoken of as "moderate," make the soldier less rather than more fit for work, and decrease rather than increase the amount of energy which he can put

forth under given conditions. That the use of alcohol in large amounts is harmful no one doubts.

It is possible that it may some day be proved that the effect of very small amounts of alcohol upon the economy is such as to entitle it to be considered as a food. But it has not yet been so proved. And until it is, the advocates of temperance education are quite justified in any protest which they may make against the assumption that alcohol is a food.

As we have said, the whole truth in regard to the action of alcohol in the body or the question of its nutritive value is not known. If it is at some future time proved that small amounts have such a value, then alcohol must be classed as a food.

It must be pointed out, however, that even such a result would not entitle it to be classed as a desirable or hygienic food, which is the sense in which people in general understand the meaning of the term "food." Against such inclusion there are many weighty arguments, as, for example, the fact that the tendency to the formation of the alcohol habit from taking these small amounts is so great that the danger of its use far exceeds any possible benefits which may be derived from it.

In regard to the teaching upon this particular question, as to whether or not alcohol is a food, the position of the agents of temperance education in the schools has not yet been successfully controverted by scientific evidence.

It is our personal opinion that the wisest course at present would be to base the prohibition of alcohol advocated in the teaching upon the fact that alcohol is an undesirable substance, the use of which in any capacity in health is quite unjustifiable under the laws of hygiene, rather than upon the statement that it is not a food, or the unqualified statement that it is a poison. For while the latter statements in unqualified form have, at the present time, the preponderance of scientific evidence in their favor, still our knowledge in this regard is not complete. The former statement, however, is based upon facts and arguments so established that it may be regarded as true beyond the shadow of a doubt.—[Boston Medical and Surgical Journal.

QUITE A DIFFERENCE.

In one of the cities of Massachusetts, where no license had ruled for two years, at an election license was carried. The effects were disastrous. Take the following:

A little boy, when in a store, said:

"Well, the saloons are open again."

"Yes," answered the merchant. "Does it make any difference to you, my little man?"

"Well," said the boy hesitatingly, "we don't have so much to eat at our house when the saloons are open."—[Sunday-School Advocate.

ALCOHOL IN REAL LIFE.

THE recent address of Dr. Atwater before the National Superintendent's Association in Chicago brought us the following letter from one who also has tested the food value of alcohol, but who has arrived at conclusions far different from this eminent scientist:

"Having just read the discussion in the Times-Herald about the value of alcohol as a food, and whether children should be taught the use of it, allow me to tell you what I know. I am a mother with three lovely children, and a wife widowed because of alcohol.

"For us it has ruined a prosperous business, broken up what might have been one of the happiest homes in the world, broken down my health and left a legacy to innocent children they never should have had. After seeing his father literally destroyed by it, my boy of fourteen is saddened but says, "Mother I'll never touch the stuff. It will be no compliment to you and every one will say your father did it." A little girl of twelve says, "Mamma, our physiology says that the children of a drinking man are apt to have consumption," and my little girl of seven is so nervous. There's the curse — oh! If it never was made. It is very easy for a scientific man to say that a little does no harm, but not so when he has felt the sting which is like that of an adder and serpent; or when he has no power within himself to say he will let it alone and do it. It will get the better of any one, no matter how strong he is, if he trifles with it. No curse on earth is so terrible. Teach the children how deadly it is, and how a little will invariably create the awful appetite for more until it has control of one. I can not refrain from writing these lines after feeling what I have felt and living what I have lived."

A TRUE SUFFERER FROM ALCOHOL.

OPEN THE DOOR, SWEET APRIL.

Open the door, sweet April—
The call is low and clear
From the underground procession
All ready to appear.
Arbutus is longing
Her woodsy home to find,
And violet, the darling,
Is crowding close behind.

Open the door, sweet April,
Gay tulip, with her cup,
Daffy and narcissus
Are waiting to come up,
A million billion grasses,
Each with his little spear,
Are pricking at the portal,
Thou warder of the year.

—MARY F. BURTS.

Primary Lesson.

SECOND YEAR.

CIGARETTES.

AN old German legend, put into verse by Browning, tells how the town of Hamelin was despoiled of its children by the Pied Piper. Other people saw only a strolling musician in old-fashioned garb, but to the boys and girls who heard him this wonderful player was a messenger from an enchanted land sent to lead them thither, and they followed unquestioning until the mountain opened and shut them in.

The strange and untried appeals to children as strongly as do well-beaten paths to their conservative elders. They are spared the adult's life and death struggle against the chains of habit, but perhaps a greater danger confronts them in the glamour surrounding the untasted glass of liquor or the first cigarette. To the child these things are a fascinating part of the insignia of manhood, and only after it is too late does he realize that indulgence in them has sapped his vigor and closed to him the door of highest success and enjoyment.

The most important work of the school is to prepare the child to resist temptation and meet responsibility without faltering. The influence of the cigarette is as perilous to-day as were the seductive pipes of the old Hamelin musician, and we can save our children only by teaching them the danger which lurks in these harmless looking rolls of paper and tobacco, before the appetite for them has been formed.

CIGARETTES HURT THE HEALTH.

A week or two before taking up this topic with your class, give preliminary lessons on what we need to eat and drink, why we must have food, and how it is used by our bodies. Ask the children to find out at home what they can about the growth of the most common food-plants, potatoes, for example; how the soil is made ready, how the plants are taken care of after they appear, what part is used for food and how it is made ready for eating. Why is the farmer careful to keep his potato fields free from weeds? Why do we not eat weeds as well as potatoes? Let the class plant a few potatoes in a box of earth in the schoolroom and watch the growth of the shoots as they appear.

Connect this work on food with the cigarette lesson by a story bringing out the points you wish to emphasize. We suggest for this purpose

THE POTATO'S COUSIN.

"I don't like Ray Porter's cousin Blake at all," said Arthur Hewitt with a very cross look on his face.

"Why, I thought Ray was your best friend, I hope you have not quarreled with him."

"Oh no, he's all right; but Blake's another sort. You can't play with him he cheats so. He gets all your marbles and keeps them, and he wants the best place in every game. Then he's always hitting little fellows and the girls, but he doesn't dare tackle a fellow of my size," said Arthur, swelling up as big as possible.

"What are we going to have for dinner?" he asked presently. "I'm 'most starved."

"Baked potatoes and cold chicken? Oh goody! I can make a jolly hole in that. There isn't anything quite so good as a hot baked potato when you're real hungry, it goes right to the spot."

"I wish we could say as much for their cousins," said Mrs. Hewitt, with a twinkle in her eye.

"Why mother Hewitt, how can potatoes have any cousins? What do you mean?" asked Arthur.

"You would know that Ray and Blake were related because they look alike," said Mrs. Hewitt. "When you study about plants you will find that they too are alike in many ways, so we say they are related."

"Do tell me about the potato's bad cousins then," asked Arthur eagerly. "Are they as mean as Ray's cousin Blake?"

"One of them is quite like him in some ways, only a great deal worse. He, too, always cheats those who have anything to do with him, and he hurts big boys and men as well as little ones. He isn't afraid of anybody. My little brother had been brought up on potatoes and meat and was well and strong, but one day an older boy introduced him to the potato's cousin that I'm telling you about. 'It'll make a man of you,' he said.

"But alas, it did just the opposite! When Mark was twenty years old he was no taller than he was at fourteen. Instead of being a large strong man like your father he was weak and sickly. He couldn't play ball because he had so little muscle. He couldn't walk or run fast because his heart was weak.

"His skin grew yellow and his teeth black and dirty although he brushed them often and tried to keep them white.

"In school he got behind his class, and he grew so nervous that his hands trembled and he jumped whenever he heard a noise.

"The worst of it all was that although he

knew how it was hurting him he had grown so fond of it that he couldn't let it alone. He didn't care whether he had enough to eat or not, but he always took care that he had enough cigarettes to smoke."

"Oh my," said Arthur, "are cigarettes cousins to my baked potatoes?"

"Yes, they are made from the tobacco plant which is like the potato in some ways, but they are very bad cousins and I hope my boy will never have anything to do with them."

"Not if I know myself," said Arthur. "Potatoes are good enough for me."

Review with the children some of the reasons why we can not get along without food, putting on the board the facts thus obtained, showing that

asked Mrs. Carey six months after he had made his choice. "He isn't so old by two years as Burt Nelson, the last boy I had, but he's worth as much again.

"In the first place, he is always on time, looking as neat and trim as you please, hair combed, shoes blacked, and face and hands clean as soap and water can make them. Burt was lazy, and as careless in his work as he was in his looks.

"Then Andy never forgets. If I tell him to mail some letters he doesn't leave them behind and then when he gets to the office wonder what he's there for. Why Burt made ten mistakes to his one, and he was such a surly fellow none of my customers liked him. Worse than all he sometimes helped himself to the change in my

"The round world pays tribute to the spring;
The birds and I will carol our delight,
And every breeze Love's messages shall bring."

Food { Helps us to grow tall. / Keeps us well. / Makes us strong.

Next, ask how cigarettes hurt Mrs. Hewitt's brother. Do they have the power to hurt other children in the same way? Talk over the story with them until they bring out in their own language the facts that

Cigarettes { Keep children from growing tall. / Make them sick. / Weaken muscle.

CIGARETTES UNFIT BOYS FOR BUSINESS.

Mr. Ames wanted a boy to run errands and help him in his store.

"Do you know why I took your Andy?" he

cash drawer. He didn't mean to steal but he had grown so stupid he didn't always seem to know what he was doing.

"I tell you that boy's mind is well nigh ruined by the cigarettes he's forever smoking, and by and by he'll not be good for anything. You may be thankful your son has sense enough to let them alone."

Tell this story to your class and talk about it with them. Why did Mr. Ames change boys? In what ways did he like Andy better than Burt? How did each boy look when he went to work? Why did Mr. Ames' customers dislike Burt? What made Burt careless and forgetful? Why was Mrs. Carey glad that Andy did not smoke? Why does no good business man want a boy who smokes cigarettes?

All the children should be asked for answers to the last question, based on their own knowledge or on the story just told them. Write their statements on the board and use as topics for review:

Cigarettes { make a boy lazy and careless. / spoil his temper. / make him forgetful. / waste his time and money. / make him lie and steal.

CIGARETTES MAKE PEOPLE SELFISH.

Two half-grown boys were sitting in the smoking-car of a suburban train. As the car gradually filled they began to look about them.

"Bob," said one of the boys, "wouldn't it be the polite thing for you or me to get up and let that old gentleman who is standing have a seat?"

"May be it would," replied Bob, settling himself more comfortably in his seat, "but you don't have to be polite in the smoking-car."

Tell this incident from real life to the children and find what they think about it. Why did Bob think it was unnecessary for him to be polite in a smoking-car? What is it to be polite? Where is politeness needed? How does it help? In what ways is the smoker impolite? How does he hurt the air other people must breathe? How does he help to make the sidewalks disagreeable for others? the cars and every other place he happens to be in? Is it kind or right to think only of ourselves?

Theodore Ellis and his mother were going into the country for their vacation. They went up the Hudson in a steamboat, and they were both so fond of the water that they stayed on deck to enjoy it.

Some large well-dressed boys were there too, smoking cigarettes I'm sorry to say, and not thinking at all about the beautiful river.

The smoke made Mrs. Ellis' head ache and she soon felt faint and sick.

"Won't you please throw your cigarettes away, boys?" she said to them after awhile, "they make me ill."

Some of the boys pretended not to hear, but one of them muttered "I guess I shall smoke if I want to. You can't stop me."

They did not stop and poor Mrs. Ellis soon had to go inside and lie down.

Theodore tried to bathe his mother's aching head, although he was such a little fellow, only four years old.

"When I'm a man I'll whip them all," he said, "for making my poor mamma's head ache."

"You can do something for mother which will please her a great deal more than that," said Mrs. Ellis.

"What?" asked Theodore.

"Promise me that you will never touch tobacco. Then I shall know that my son will not spoil any one's pleasure, as these boys have spoiled mine. Perhaps they were brought up to be thoughtful and unselfish, but now they are so fond of their cigarettes they can think of nothing else."

Cigarettes { make people selfish. / make people cross. / make people rude.

When Theodore grew older and other boys wanted him to learn to smoke he used to say, "No, thank you. I'd rather be a gentleman."

AUTHORITATIVE QUOTATIONS.

TOBACCO A POISON.

Tobacco is a powerful poison.—[Medical Record.

The smoker cannot escape the poison of tobacco.—MARSHALL HALL, M.D.

TOBACCO HURTS THE HEALTH.

Boys that begin the tobacco habit at an early age are stunted physically, and never arrive at normal bodily development.—H. H. SEERLEY, Principal Iowa State Normal School.

TOBACCO HURTS STRENGTH.

The idea that tobacco gives increased power to endure either physical or mental hardships, is one of the greatest delusions of the age. Tobacco may, for a short time, make a man less conscious of his fatigue, but the truth is that his strength is diminished, rather than increased by its use.—THOMAS G. ROBERTS, M.D.

TOBACCO DESTROYS BUSINESS ABILITY.

The general freight agent of a large railroad says that he will in the future employ no young man who smokes cigarettes, and he intends to get rid of all now in his department who smoke them. "Eighty-five per cent.," he declares, "of the mistakes made in the office by my two hundred clerks are traceable to the thirty-two who use cigarettes."

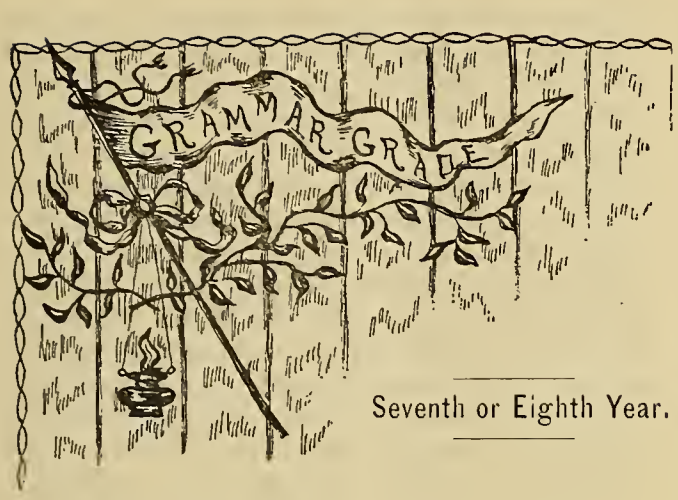
A SPRINGTIME PURITAN.

The silent snow has ceased to fall,
The noisy rain comes down
And turns, between two milder suns,
A white world into brown.

Here are the lichens and the moss,
The rocks on which they grow,
Here are some sturdy leaves and buds
Of flowers we used to know.

Behold, in pink she-cometh forth,
As Calyxes unlock,
Our Puritan, the arbutus,
Beside her pilgrim rock!

—MARY A. MASON.



Seventh or Eighth Year.

ORGANS OF THE BODY.

A STALWART Yankee once applied for the post of pilot on a Mississippi river steamboat.

"Do you know all about the river, where the snags and shallows are?" he was asked.

"Well, I don't know as I do, exactly," was the unexpected reply, "but you can depend on me for knowing where they ain't, and that's where I calculate to do my sailing."

It is equally unnecessary for the schoolboy to be versed in every symptom of disease. What he must know, however, if he is to steer his own life-boat successfully through the shoals and breakers of temptation, is exactly where the safe channel of health is to be found. He must study his body and learn how to take care of it; he must know what each organ is for and what he can do to fit it for its work; then he is prepared for a successful voyage, and only unforeseen accident can prevent him from making harbor.

Mr. Moody used to say that it was worth going a thousand miles to get a good thought. People who have lost their health would gladly travel many times that distance to get it back again, but too often it is not to be recovered. We can be sure of retaining this precious possession only by carefully guarding it while it is our own.

DEFINITION AND USE.

Much is gained in physiology work by taking up the subject from different standpoints. Pupils in these grades have already studied with more or less thoroughness the bones, muscles, special senses and other portions of the human system. The present lesson suggests that they consider these as organs, that is, as parts of the body designed to do some special work.

It will help to give the right idea if they are led to compare the organs of the body to a number of different machines in the same building, a watch factory for example. Here one machine turns out nothing but screws, the hands are made by another machine, certain wheels by a third, and so on throughout the factory. Each machine is fitted to construct its own particular part of the watch and does nothing else. It is much the same in our bodies. One set of organs takes the food we eat and digests it, other organs carry it to every part, others still remove waste, cover and protect the body, hold it in position, or enable it to move from place to place.

Have the class find from the dictionaries and physiologies at hand a good definition of an organ as referred to the human body. Then let each make a list of such organs as are named and described in his text-book, doing this from memory as far as possible, and enlarging and verifying his list by reference to a physiology for this grade. Ask one pupil to copy his list on the board. Others may add to it if anything has been omitted until it includes the organs of

Support—bones.
Motion—muscles.
Digestion—mouth, stomach, intestines, pancreas, liver.
Absorption—blood-vessels, lacteals, lymphatics.
Circulation—heart, arteries, capillaries, veins.
Respiration—nose, bronchial tubes, lungs.
Secretion and excretion—glands.
Control—brain, nerves.
Special sense—eye, ear, nose, tongue, skin.
Speech—larynx.
Protection—skin, hair, nails.

This outline, when completed, may be used as the basis for a series of review lessons. Ask each pupil to select one organ from the foregoing list as his special topic, and find out all he can in regard to its use in the body.

Why is each of these organs needed? How does it do its work? Which organs can we watch while they are at work? Which could we get along without? Which are essential to life?

STRUCTURE.

Have the class name some of the different machines they are familiar with. Of what material is each made? Give reasons in each case why such material was selected by the manufacturer. Why is steel used in some cases instead of iron? When is brass or copper preferred?

Of what materials is our clothing made? Why do we use leather or kid for our shoes? Why do we select flannel underclothing in winter and cotton in summer?

What are the different organs of the body made of? In what respects does the structure of the bones differ from that of the muscles? from that of the nervous system? the liver? Have the class compare similarly the structure of the other organs, noting resemblances and points of difference in each case. Why would not the same kind of material do for all? How is

each kind adapted to the work it must do? Which of these organs have elastic walls? Why is this needed? Where would it be a disadvantage?

Call attention to the various shapes and sizes of the different organs. Which are solid? Which hollow or in the form of cavities? Which are passage-ways or connecting organs? In this connection put outline drawings of the different organs on the board and have them named by the class from their shapes and appearance.

Have the class name animals which have the same organs as man. In what respects does the structure of any of our organs differ from that of an animal? What reasons can be thought of to explain such differences?

RELATION TO OTHER PARTS.

Co-ordination of topics is especially necessary in the study of physiology. Unless this is insisted upon and clearly brought out by the teacher, pupils will get the idea that the circulation of the blood, for instance, is important in itself, but they will fail to understand its connection with the nervous and muscular systems and with every other part of the body.

Compare the work of the different organs to that of the different people in a community. Why do we need bakers and farmers and shoemakers and carpenters? Why is it more profitable for each man to know how to do some one kind of work well than for all to know a little of everything? How does the merchant get what he needs to eat if he spends all his time in selling goods? How does the farmer obtain his clothing, and the banker the house he lives in? How many different kinds of work are done in your locality? How is this division of work a benefit to all the people? Why do we need so many different organs in the body? What kinds of work are carried on by them at the same time? In what way is each important in itself? How is it related to the work of the other organs?

Have each member of the class choose some organ of the body and show how its work affects the rest. For example, have them find and explain what the process of digestion has to do with the bones, the nervous system, and the lungs? How does the work of the heart affect all the rest of the body? How is the work of the special senses related to that of the muscles? Think of each organ in turn and find what others, if any, it could get on without and still do its own work as before. Name the organs most essential to life in order of their importance.

CARE.

In studying this topic call particular attention to the need of all-round, symmetrical development of the body and how to get it.

Recall the story of the famous One-Hoss Shay. Why was it that every part collapsed at once? Why do some people die of consumption? others of heart disease, affections of the stomach, kidneys or different organs? Why are there comparatively few instances of people dying from old age without any apparent disease?

Call for forms of exercise which will develop the different muscles of the body. How can we exercise the respiratory organs? the voice? Ask the pupils to make out a list of exercises for the development of each organ studied, and have the best suggestions copied on the board. What organs are exercised when we run? when we study? row a boat? sweep a room? eat our dinner? play ball? climb stairs? Why does a person who exercises all parts of his body equally usually have better health than a student who takes little exercise, or an athlete who trains certain organs excessively and neglects others?

When do the different organs of the body get the rest they need? How is the heart rested? the lungs? the stomach? How are the digestive organs injured by overeating? by eating between meals? How are the various organs benefited by rest and sleep?

Consider the effect of food on the organs of the body. Which organs receive and prepare it to be absorbed? How is it of use to the others? Refer to Æsop's fable of the hands which refused to give the stomach food any longer because they could not see that any benefit came to them from what the stomach had. Read also to the class the twelfth chapter of Paul's first letter to the Corinthians. What would be the effect on the other organs of the body if some of their number should strike and refuse to go on with their regular work?

HARM DONE BY ALCOHOL AND TOBACCO.

There is but one sure way of keeping the child from harming the organs of his body by indulgence in alcohol and tobacco, and that is to give him an abiding sense of the value of these possessions. The boy who has worked long and hard to earn a holiday does not waste a moment of it. The man who has built up a fortune dollar by dollar will never recklessly squander his hard-earned capital. Neither will he who fully realizes the blessings of health place this in jeopardy by tampering with narcotics.

Introduce the subject by finding what your pupils regard as their choicest possessions. These will be perhaps a pony, dog, bird, a new dress, knife, or game. Find in each case how this is cared for by its owner. If it is a watch which keeps good time is it ever dropped just for fun? Is it allowed to run down? Is the case left open? Are particles of sand or dirt

put into the works? Why not? Any or all of these things have happened to watches before and they have sometimes continued to run for a time apparently as well as ever.

Put similar questions to the class in regard to other things which they value most highly. Then turn to the subject of health. How much would they take for this possession? Would any number of pets or playthings or fine clothes make up for the life of an invalid? Have them find from their text-books and all other available sources how the different organs of the body are hurt by alcoholic drinks and tobacco. Discuss with the class whether all the bad effects they find spoken of always appear in every drinker or smoker. Is it possible for a man to drink or smoke and suffer apparently no injury for a time, just as a watch may be dropped and appear to run as before? Which is more precious the watch or one's health? Which can be replaced more easily? Which watch will last longer and keep better time, one which always has good care or one which is dropped occasionally? Which stands the better chance of keeping his health and living to a good old age, the person who observes every law of health and avoids all bad habits, or he who drinks a glass of beer when he feels like it and smokes a cigarette now and then?

"Lo! we greet life's happiest angel,
Here is Easter at the door."

Emphasize in this connection the most dangerous feature in the use of any form of narcotics — the power of even small amounts to create an appetite for more which may continue until the victim has lost not only health but property, friends and even his manhood. A great teacher of morals has said, "To-morrow ever does its work irresistibly and does it to-day." If we as teachers would send pupils out into the world stronger in body and more richly equipped in mind and morals than those who have preceded them, we must teach each one to place the proper value upon these priceless possessions and guard them as he would life itself. It can be done and will be when our own eyes are opened to the importance of the truth we try to teach.

"Fair-handed Spring unbosoms every grace;
Throws out the snowdrop and the crocus first."

AUTHORITATIVE QUOTATIONS.

ALCOHOL CAUSES DISEASE OF THE VITAL ORGANS.

Alcohol exerts its essential and most significant influence on the vital organs by being taken up in the circulation, and thus brought into contact with the cellular tissues of the vital organs. Cirrhosis of the liver, diseases of the heart, of the arteries, of the mucous membrane of the alimentary canal, along with gout, diabetes and fatty degeneration are all ascribable to it.—Adolf Strümpell, M.D.

With children a multitude of troublesome diseases, particularly of the nervous system, arise directly from the use of spirituous drinks. — Adolf Frick, M.D.

ALCOHOL A CAUSE OF DYSPEPSIA.

The effect of alcohol is to produce a state of excitement and irritation in the stomach, the result of which, when frequently repeated, is permanent congestion and numerous forms of dyspepsia. — J. H. Kellogg, M.D.

ALCOHOL PARALYZES NERVES OF SENSATION.

The invariable effect of alcohol when taken into the stomach is that of paralysis of the nerves of sensation, the amount of this paralysis depending upon the quantity of the poison administered. This explains why it is that persons feel better after having partaken of the liquid. They have less feeling and what they do have is less reliable.—C. H. Shepard, M.D.

ALCOHOL OVERWORKS THE HEART.

Alcohol is such a virulent poison that a large amount of vital energy is called into requisition to free the nervous system from its presence. This effect upon the circulation is directly injurious, for it causes the heart to do more work without any counter-balancing advantage. The ultimate result is exhaustion.—[Journal of Hygiene.

ALCOHOL INJURES THE BRAIN.

The brain is more unfavorably affected by alcohol than any other organ, and that in a variety of ways.—M. S. Whitestone, M.D.

ALCOHOL CAUSES DEGENERATION.

The degeneration of the muscles, heart, brain, nerves, liver, kidneys, and, in fact, all the organs of the body is induced by the habitual use of alcohol. The very weakest wines are unsafe, and even small beer is capable of doing mischief in this way.—J. H. KELLOGG, M.D.

There is not one single tissue or organ in the body which is not damaged by the habitual use of alcohol.—A. E. T. LONGHURST, M.D.

NARCOTIC ACTION OF TOBACCO.

Tobacco is one of the slowest and one of the surest poisons to the human race. Some of its effects are great weakness of the heart's action, lessened respiration and impaired intellect.—C. H. POWELL, M.D.

TOBACCO A CAUSE OF THROAT TROUBLE.

The smoker finds himself suffering from dryness of the throat, thirst, general depression of spirits, perhaps slight giddiness, and some anemia.—[Bulletin Am. Med. Ass'n.

NICOTINE POISONS THE TISSUES.

Nicotine is very readily absorbed by the mucous and cutaneous surfaces, particularly if the continuity of either be broken. Fatal symptoms have developed from the mere inhalation of tobacco smoke, a condition in which but a small percentage of nicotine comes in actual contact with the mucous surface.—G. W. CROOK, M.D.

CIGARETTES PREVENT GROWTH.

The habit of cigarette smoking indulged in by boys under twenty results in stunted growth, nervousness, indigestion and disease of brain and kidneys.—C. P. CHESLEY, M.D.

CIGARETTES WEAKEN THE HEART.

The habit of smoking cigarettes causes functional disturbance of the heart and frequently valvular murmurs.—W. P. BRECHIN, M.D.

TOBACCO IMPAIRS PHYSICAL POWER.

Tobacco impairs a young man's physical powers, and so far renders him ineligible for the positions requiring full bodily vigor.—GEORGE C. CHASE, Pres. Bates College.

Accompanied with the use of the narcotic tobacco in the case of several hundred boys were certain disordered physical functions such as indigestion, impaired taste, defective eyesight, dull hearing, nervous affections and diseases of the heart.—H. H. SEERLEY, Prin. Iowa State Normal School.

The greatest of physical evils is that which enfeebles the organs of the body through which the mind works. Nicotine is peculiarly a brain poison.—A. F. CHASE, Prin. Bucksport Sem.

EASTER MORNING.

In the countless green blades of the meadow,
The sheen of the daffodil's gold,
In the tremulous blue on the mountains,
The opaline mist on the wold,
In the tinkle of brooks through the pasture,
The river's strong sweep to the sea,
Are signs of the day that is hasting
In gladness to you and to me.

So dawn in thy splendor of lilies,
Thy fluttering violet breath,
O jubilant morning of Easter,
Thou triumph of life over death!
For fresh from the earth's quickened bosom
Full baskets of flowers we bring,
And scatter their satin soft petals
To carpet a path for our King.

MARGARET E. SANGSTER.

AN INSPIRING ATMOSPHERE.

Let us make the first years of school life an inspiration to the children. They will not forget the essentials half so quickly when these are given to them well prepared and in digestible form.

A child is inspired by an opportunity to be of assistance. It is one of the best things for the children and it teaches them to be careful, thoughtful and polite; yet they realize that they must be gentle and obedient in order to be trusted to be helpers.

If they seem tired let them give three cheers for the flag. That will arouse them. If they are noisy let them sing a sweet song softly, or sing one to them yourself. This will soothe them.

Watch them carefully. Speak to them tenderly but firmly. Gain their confidence. Encourage them, and in every way let them feel, old or young, rough boys or gentle little girls, that the school is theirs and that you are their friend. Let school life be happy, filled with good work and permeated with an inspiring atmosphere.—MARGARET H. J. EATON.

EXACTNESS.

"What are the inhabitants of the Sulu Archipelago called?" asked the teacher.

"There is no specific name for them," replied the little Boston boy. "They may be classified, perhaps, under the general name of fish. There are sharks, flying fish and others, with tortoises or turtles of various kinds, which, however, are not fish, but"——

"What are you talking about, Ticklowell? I am asking you about the inhabitants of the Sulu Islands."

"I beg your pardon. You asked me about the inhabitants of the Sulu Archipelago. I assume that everybody knows an archipelago is merely a sea or body of water interspersed with islands."—[Washington Star.

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THE NEED OF RIGHT LEGISLATION.

THE facts of temperance physiology, as developed according to the advancing comprehension of the pupil, are expected to appeal, and do appeal, to his reason and understanding, and consequently to the strongest instinct in his nature, self-preservation.

When a foundation has thus been laid in knowledge of great nature's laws, which are God's laws on this subject, there is a basis for intelligent, moral appeal to live a hygienic life, to abstain from whatever mars the temple in which the soul dwells, and it applies with tremendous force. Ethical instruction on this subject without scientific reasons becomes unmeaning cant which repels the ordinary boy.

This being a science whose truths are to be learned, there must be a definite time and place in the course of study for enough lessons to cover the topic. The survival of the fittest justifies taking enough lessons from arithmetic, geography, and other studies to make room for this, for it is more important for a boy to know the laws of hygiene, including the reasons why he should not drink beer and smoke cigarettes, than to be able to name every river in China. He may never go to China, probably never will, but he will have to live in his body while he stays in this world, and he should know how to keep it in such health that it will be his obedient servant in all lofty endeavor.

A strong, explicit law, with a penalty, will secure an immediate enforcement which fifty years of utmost endeavor under a weak statute can not bring about. Therefore, whoever would save the children of to-day from the horrors of intemperance will see the need of right legislation on this subject. He who carps at the specifications necessary to secure immediate and universal enforcement of a temperance education law shows thereby a lack of conception of the gravity of the issue. Shall pedagogical quibbles prevent thousands of children from receiving that warning education which will guide their feet in the ambushed walks of life into the paths of intelligent sobriety?

PROFESSOR ATWATER AND TEMPERANCE TEACHING.

THE American people demand that their children be taught the effects of narcotics and intoxicants upon the system. This demand is made, first, in the interests of the growing boys and girls; and, second, in the interest of good citizenship.

The method of presenting this subject rests with the educators of the country. The law does not prescribe particular text-books. Any one may write a text-book, and any one may publish a text-book.

The existence of a general law providing for temperance instruction makes the path of the superintendent much smoother than it would be if no such law existed. In that case the majority of parents would be asking for temperance instruction in his schools, while some of the influential politicians to whom he owes his position would quietly advise him to ignore these petitions. With the law as a fortress his only concern is how best to present the subject. If he is not satisfied with the usual methods he is largely responsible for their improvement.

Within the last few months criticisms have been made upon the teachings in the indorsed books that alcohol is a poison.

Ever since the time of Liebig this question has been periodically discussed, but in every case the consensus of scientific opinion has remained unmoved, and scientific men have continued to classify alcohol as a narcotic drug and not as a food.

Several men of science have stated that "because of its oxidation in the body alcohol seems to have a certain food value," but not one of these scientific men, when defining foods, so formulates his definition that alcohol can be included, and not one of them, while classifying and enumerating the various food-stuffs, includes alcohol in his classification.

When Dr. Nansen returned from his polar expedition he did not hurry from one gathering of teachers to another asking that the study of geography be dropped from the common schools because geographies did not contain the results of observations which he had made upon controverted questions, but he went before bodies of scientific men and demonstrated the correctness and tenability of his conclusions. As a result, it is only a matter of a few months or years before the advances in that branch of science will be adequately treated in all school geographies.

If those who criticise the present system of instruction succeed in demonstrating to the satisfaction of scientific men generally that alcohol is a food, they will find that subsequent editions of the school text-books of physiology will contain the statement.—WINFIELD S. HALL, Ph. D., M.D., in Union Signal.

TEMPERANCE PHYSIOLOGY.

IN less than twenty-five years the study of temperance physiology has been revolutionized, as well as infinitely extended. There are a thousand physiologies used to-day where there was one then, I have no doubt, and they are used vastly better. Scientific temperance teaching has succeeded in making physiology a universal school subject, as it never was before; and if Mrs. Hunt were to die to-day and the W. C. T. U. should abandon its crusade, physiology would be taught in all grades for all time to come. Smile if you will at some things the little people bring home from their physiology lesson, the fact remains that there is no subject taught in school that they more enjoy talking about, or that does them and the home more good.

Over fifty years ago Horace Mann in his sixth annual Massachusetts report gave nearly the whole volume to advocating the teaching of physiology. The doctors of that day—history repeats itself—made such a fierce attack upon him therefor as to jeopardize all educational reform, and he abandoned the crusade. Nearly fifty years afterward it came and came to stay. It is a product of the fourth quarter of the century and not the second, and is due to woman and not man. All must agree that intemperance is the great American evil. It is not a question whether beer in Germany and light wine in France are harmless, nor yet whether under certain circumstances light beverages are beneficial as a relish. Intemperance is a terrible curse in America. It undoes the work of the school as nothing else can. There is no distinction, intellectually, between a Hottentot and a collegian when they are drunk. The schools, next to the homes, are sufferers from the drink habit. At a low estimate, one hundred thousand children in the schools to-day suffer in food and in clothing, by neglect, and through direct cruelty of intemperate parents. Absence, tardiness, indifference, weakness, dullness, and various forms of viciousness in school are chargeable to this cause.

There is no far-reaching means of staying the spread of this curse to the next generation except through the schools. If the school can do nothing in this crisis, then America must, apparently, admit herself to be powerless to stay the drink habit. Why should not the schools make a grand effort to stay the spread of this curse? Small-pox harms one person where intoxicants harm hundreds, and yet the child will not be admitted to school unless he has been successfully vaccinated. It does not matter that many children have suffered from vaccination, no more does it matter that some parents do not believe in vaccination. Why should not law require that something be done by the schools to innoculate children against the drink habit?

If intemperance is a giant evil, if it does the school a great injury, if the school ought to do something in the emergency, what shall it do? It can not deal with political aspects of the case, no more can it with the religious. Its sphere is distinctively educational. If alcoholic beverages tend to the most serious physical, mental, and moral disorders, as every sane person knows they do, it ought to be possible to show why they wreck the body and tumble it into the gutter; why they upset the mind and make a man of culture an idiot, and often a maniac; why they sap the morals and make a loving husband and father, wife and mother worse than a sober savage that never heard of church or school. It ought to be possible to teach children why intoxicants thus ruin body, mind, and morals as nothing else in nature or human nature can do. If there is anything that can be taught in this direction wisely, it ought to be taught.

With all due deference to the wisdom of medical scientists, it may be asked of what importance it is to the school that in small quantities, under favorable conditions, alcohol may be a food, or that in certain physical conditions light alcoholic drinks may be a relish? Is it not "straining at a gnat while swallowing the camel" to style the omission of these facts "immoral," while attacking the only known means of enlightening fifteen million school children in America upon the tendency of alcohol, used in any quantity, to create an appetite which usually becomes uncontrollable, placing the limbs, the tongue, the eye, the temper, and the mind beyond the control of the will?

If the omission to credit slight benefits to alcohol is immoral, why is it not equally so not to specify the benefits of lying. It is scientifically known that lying in small quantities and under some conditions is one of the best of intellectual activities. It pays the highest premium upon an infallible memory, it stimulates the imagination, it gives a "relish" to the study of cause and effect, it is "food" for reflection in small quantities and under the right conditions, and in a multitude of other ways is intellectually beneficial. Is not the Bible, therefore, highly immoral when it teaches the moral ill effects of lying and omits the truth about the intellectual benefits of untruths?—A. E. WINSHIP, Litt. D., in Journal of Education.

SOME OF OUR FRIENDS.

They'll come again to the apple tree,
Robin and all the rest,
When the orchard branches are fair to see
In the snow of the blossoms dressed,
And the prettiest thing in the world will be
The building of the nest.

—MARGARET E. SANGSTER.

ANTI-ALCOHOLIC TEACHING IN BELGIUM.

ANTI-ALCOHOLIC teaching in the primary and intermediate schools of Belgium was commenced in one province in 1887, but not until 1897 was it formally incorporated into the school curriculum of the country.

During the first two years, the children are taught in familiar conversations about the common drinks—water, tea, coffee, chocolate and the fruit drinks. In the third and fourth years instruction is given regarding fermented and distilled drinks; the errors and prejudices relative to the use of alcoholic drinks, and their refutation; that alcohol is not a food, does not increase muscular strength, does not warm the body. Descriptions are given also of the nervous, digestive and circulatory systems with the influence of alcohol upon all the organs of each.

In the fifth and sixth years are considered alcoholism in its social and economic relations; mortality, criminality, pauperism and misery; its influence upon family relations and public order; the causes of alcoholism; drunkenness; the use of tobacco; bad hygienic conditions of workingmen's homes; poor and insufficient food; means of combating alcoholism—by instruction, moral and religious means, temperance societies, economy, the betterment of the homes and food of working people.

Official statistics show that in ninety-two per cent. of the primary schools and in eighty-three per cent. of the higher schools this instruction against alcohol is being given.

On account of the character of the school system in Belgium, it is as yet impossible to secure any uniform instruction. Some of the towns, however, are distinguished by their determined purpose to contend against alcoholism by means of the school. Thus, for example, the communal government of Brussels has bound the teachers to combat alcoholism on every occasion that presents itself in the course of their lessons.

Besides the theoretical instruction, in many of the boys' schools temperance societies have been organized. To be eligible to membership, one must have attained his eleventh year and must take the pledge to abstain until twenty years of age from the use of gin and other strong drinks and use but moderately beer and wine. [Here is unquestionably a weak point in the system. A Swiss commentator says: "We must not forget that the only teaching against alcohol that will be efficacious with us, is that which will not spare wine and beer more than other liquors." The Belgian instruction and pledge are evidently directed against the drinks that are most common and most abused in that country. The very fact that the use of strong drinks is forbidden and a moderate use of wine and beer allowed will tend to increase the use of the latter with their attendant evils.]

"Be glad, O heart of mine!
Up from the grave he rose, the Crucified,
That thine might be the joy of Easter-tide."

Supplementary to the school temperance societies are nearly two hundred "temperance circles" under the direction of the minister of agriculture and receiving considerable financial assistance from the funds of the state. These circles are open to young people between the ages of fourteen and twenty, and are based on principles similar to those of the school temperance societies.

Anti-alcoholic instruction is given in the normal schools to the young men and women who are prospective teachers. The course of study, however, is said to be insufficient for efficacy and needs to be made more complete, and thoroughly revised.—[L'Abstinence.

THE BUILDING OF A NATION.

VII. THE LABOR PROBLEM.

IN all the changes that the years have brought since the beginnings of our nation, none have been more marked than those that have taken place in the industrial world.

Could we peep into the homes and towns of even one hundred and twenty-five years ago we should find the ways of living and of laboring different in almost every respect from those we know to-day. Could we take out the mills and factories of all kinds with which we are so familiar, stop the great printing establishments with the complicated machinery which performs so many operations that it seems almost human, and in the place of all this set up again in the homes or tiny workrooms, the spinning-wheel, the weaver's loom, the shoemaker's bench and the hand-press, we should begin to return to the early conditions of production in our country.

One man or a few men performed all the processes necessary for the transformation of raw material into the completed article. To-day many men, each doing a single, perhaps a small, piece of work, perform the many processes through which the raw material passes before it is finished for the market.

The story of the growth of the so called factory system is really the story of invention. The spinning-machines of Hargreaves and Arkwright, the power-loom of Cartwright, the cotton-gin of Whitney, each made possible a new division of labor; each enabled the laborer to produce more, and each tended to remove production from domestic to factory life. Similar results have followed inventions in all lines of industry, with the result that production under the factory system has nearly if not quite entirely taken the place of the former domestic labor.

With gradual establishment of the factory system, came the uniting of the laborers into labor organizations. Up to 1825 comparatively few such organizations had been formed. Under colonial industrial conditions there was work enough for all to do; ways of living were simple and primitive, while the laborer employed in the home or small workshop felt little need of associating himself with other workmen. About 1725 the ship-calkers of Massachusetts organized what was known as the "Calker's Club," their purpose being "to lay plans for introducing certain persons into places of trust and power," and it is an interesting fact that from the name and purpose of this club the term "caucus" was derived. Yet with few exceptions it was not until about one hundred years later that labor organizations began to be general or influential. Since 1825 they have increased greatly both in numbers and membership. Almost every trade has its own organization, while representatives of all kinds of labor are found in the general trades-unions.

Honorable Carroll D. Wright, United States Commissioner of Labor, has said:

"The labor question is the efforts of wage-workers to secure a higher standard of living. It is their struggle upward."

The labor organizations have been the means by which these ends have been and are being secured. It is said that "in union there is strength." Believing in this, it has been the constant endeavor of the laborer to secure by allied effort what he could not hope to obtain single-handed.

Labor organizations have had certain very definite ends to be reached. The factory system as it developed contained much that was unlovely, much that was unjust. The hours of labor were long, in many cases not less than twelve, thirteen, or even sixteen hours being required for a day's work. The agitation for a ten-hour day began so early that its history may be said to be contemporaneous with that of the labor movement. Little by little the point has been gained. The United States Government fixed upon ten hours as the working limit for its employees; laws were passed forbidding the employment of women and children for more than sixty hours a week, private arrangements were made between employer and workmen until the ten-hour day or its equivalent is now practically universal, if not by law, by common consent.

Imprisonment for debt has been abolished; in many states the hours for child labor have been reduced by law and the education of all children required for a definite number of weeks in each school year.

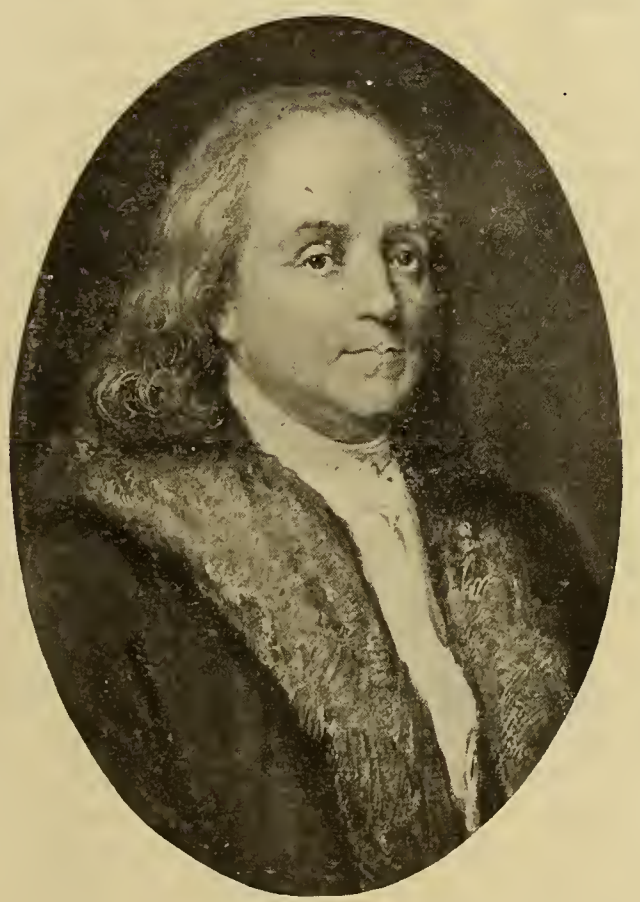
The so-called barter system has long been one of the greatest evils with which wage-earners have had to contend. By it the employer can compel his employees to purchase supplies or run an account at a store controlled by the former, and too often the advantage thus placed in the hands of the employer is used unscrupulously. By the constant opposition of laborers who justly claim a right to buy where they choose and under whatever conditions they may choose, some progress has been made toward an abolition of the barter system.

Agitation too has secured a bettering of many of the conditions of labor. Employers have been required to make provisions securing the health and the safety of life of their employees.

All these things have been accomplished but gradually. Mankind is ever slow to give up an established order of things, but the persistent efforts of labor to better the condition under which life's daily work must be done have not been without their results.

It is in the matter of wages, however, that

the greatest struggles have taken place. Protests against reduction of wages or demands for higher wages have been in the main the causes for the most prolonged contests between employers and employed. Such dissatisfaction usually finds expression in a "strike" by the laborers, who, failing to secure their demands, refuse to work; or in a "lock-out" by the employers who refuse to give work to the protesting laborers. The strike is not a new method for settling differences. "In ancient times the strike was usually a practical insurrection or rebellion in which many lives were lost and sometimes governments overthrown." In our own country it is said but four are recorded before the present century. It was not until the banding together of laborers into organizations had given them some power for action that this method of enforcing demands came into general use. So closely united are many trades-organizations that a strike once begun may spread out indefinitely, involving laborers and interests far removed from the seat of the original difficulty. The financial losses are often very great. It is estimated that in the Pullman strike of 1894 the railroads lost nearly $5,000,000, the employees nearly $1,400,000. Altogether the losses to the country at large were said to have been not far from $80,000,000.



Benjamin Franklin.

The moral results of a strike are not usually ennobling. To the credit of labor organizations and of the thousands of sincere honorable men and women in them it should be said that they do not countenance the violence that too often is part of a strike. That is usually the work of lawless elements outside the organizations. But so great is the confusion, so great the loss, that we are beginning to realize that there must be some more peaceable method of adjusting differences between employer and workman. This perfect way is yet to be learned. Arbitration is often successful, while reasonableness and an ability and willingness to see matters from another's standpoint must all enter into any peaceful solution of perplexing labor problems.

The increase of inventions and the use of machinery have had a great influence in displacing and disturbing labor. It is said that one of the latest printing-presses, run by one pressman and four helpers, will print, cut, fold, paste and count seventy-two thousand eight-page papers in one hour. To do the press-work alone for this number of papers on the old-fashioned presses would have taken a man and a boy working ten hours a day, one hundred days. The more nearly automatic a machine is made by improvements, the less is the labor needed to produce certain results. On the other hand, these very improvements require labor to produce them, and so inventions bring endless variety in labor, widening out in every direction. Many inventions, too, have given employment without taking labor away from a single workman. The simple kite-string experiment of Franklin gave the clue to the hidden forces of the air which today, working through telephone, telegraph and trolley, furnish employment for thousands in ways in which no one was ever employed before; yet the changes resulting from the constant improvements with which every one sooner or later comes in contact, tend to make labor restless.

In our popular government any matter that pertains to the interests of the people is sure, sooner or later, to find expression in politics, and the labor question with all that it involves is no exception to this rule. As yet no political labor organization has been long-lived, nor has it succeeded in bringing about the reforms it has advocated, although one or two have gained considerable power. The Populist and Socialistic Labor parties have had possibly the strongest and most permanent influence. The former "advocates a union of labor forces in the United States, government ownership of railroads, telegraphs and telephones." It has also recommended an eight-hour law for government work which, as was the case in the ten-hour struggle, may be an opening wedge for securing a general adoption of this rule for a working day.

"The Socialistic Labor Party believes in peaceful agitation and lawful means in behalf of their principles until a struggle is forced upon them." Many members of this party

believe in the use of the ballot not so much because they think they can accomplish their reforms by it, but because a political organization and vote are useful in keeping their principles before the people and thus in extending the knowledge of what they desire to accomplish.

No one can foretell what will be the outcome of the entrance of the labor question into political life. That it has come to stay may be counted as certain, but how the work will develop, what form it will take, or what its results will be no one ventures to predict.

In spite of all that has been done so far toward making the conditions of labor easier, more hygienic, fairer to laborer as well as to employer, we may be said to have but just begun the working out of the problem. Gross injustice on the part of many employers certainly still exists. Thousands of laborers secure merely the bare necessities of life by unremitting painful toil. Work under such conditions lacks that joy of service which is the secret of the best work. On the other hand, the employee too often forgets or fails to realize the difficulties of the employer. Often he does not know the sacrifices an employer makes to enable him to continue to provide work. The conduct of a business large or small brings cares and responsibilities of which the employee has no conception. Bitterness of feeling is often born of misunderstanding on either or both sides. Mutual respect and a desire for mutual helpfulness will go far toward solving many vexed questions.

The labor problem is the problem of our society to-day, inseparably interwoven with it, and only the shining thread of the Golden Rule will lead the way through its perplexing labyrinth.

EASTER AT THE DOOR.

Known by many a sweet foretoken,
Many an age-long pledge unbroken,
By the silver slant of showers,
Peeping from the friendly flowers;

Known by many a sign and token,
Many a thrill of life unspoken,
Lo! we greet love's purest angel,
Here is Easter at the door.

Where the seeds in darkness burrow,
Where the grain is in the furrow,
There hath been divinest keeping,
Waking ever follows sleeping.

Pain is brief, joy lasteth longer,
Death is strong, but life is stronger,
Lo! we greet love's mystic angel,
Here is Easter at the door.

—MARGARET E. SANGSTER.

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Pa: "Yes, Willie; that's what I said."

Willie: "Well, I wish you'd write my teacher a note to that effect. I don't think she knows about it."—[Primary Education.

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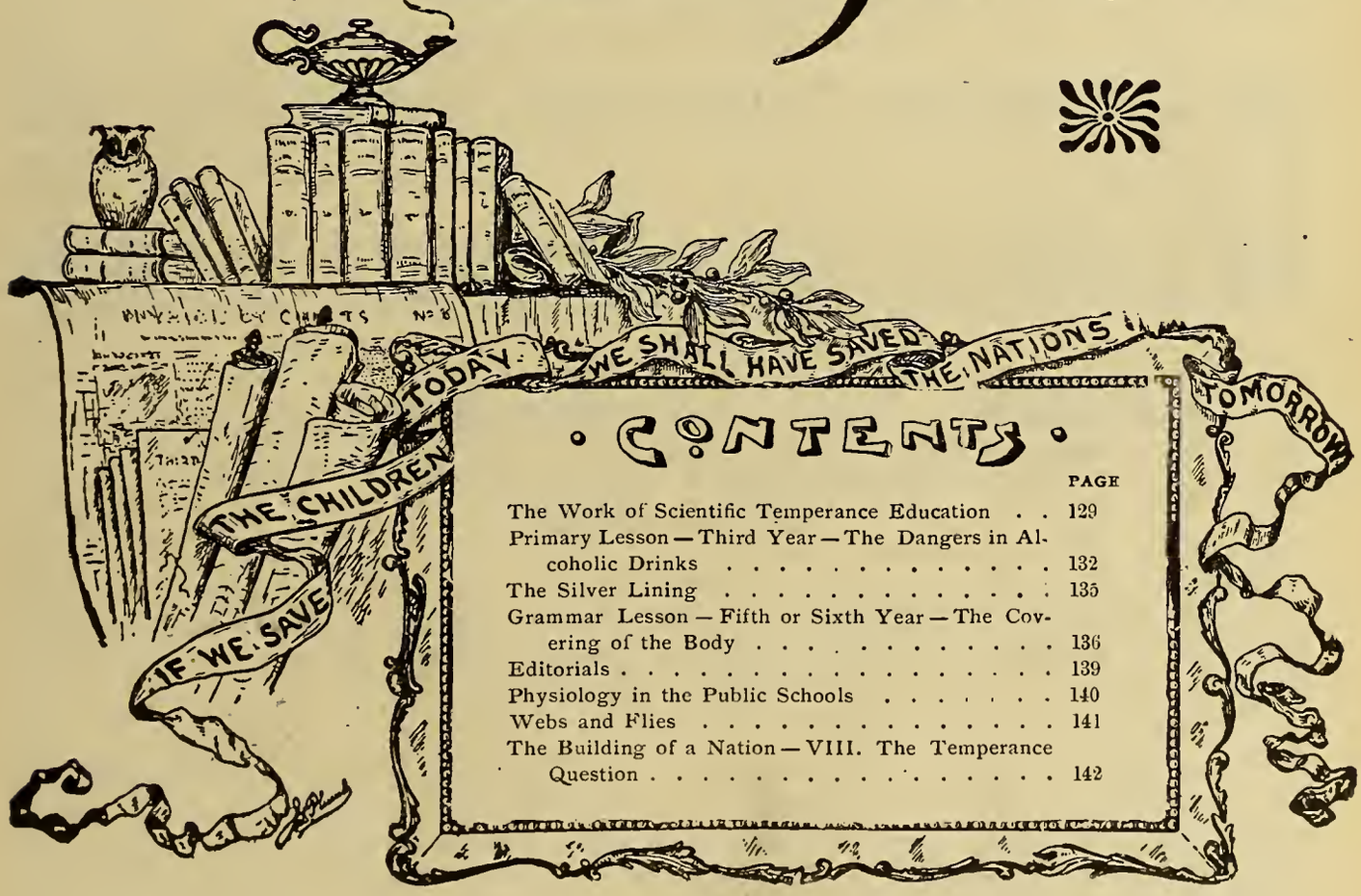

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MAYTIME.

"Such a starved bank of moss,
Till, one May morn,
Blue ran the flash across,
Violets were born."

THE WORK OF SCIENTIFIC TEMPERANCE EDUCATION.

"OUR public schools are the camps of God" where the coming sovereigns of this republic are trained and drilled for the duties of their waiting sovereignty. On that training hangs destiny. It is neither accident nor duplicity that has led fully seventy millions of the American people to say, through their representatives in congress and legislatures assembled, that all their children in their public schools shall be taught physiology and hygiene which shall include, with other laws of health, those relating to the nature and effects of alcoholic drinks and other narcotics. To the thoughtful observer this vast vox populi sounds like a vox dei, as he recalls the fact that every great emergency in our national life has shown that Providence, all unseen by our dull eyes, has prepared in advance just the right agency to meet every hour of our supreme need. If the man has been ready for the hour it has been because God has had him in unconscious training for its demands. This great republic with its increasing responsibilities as a world power, called, as we fondly believe, to be an evangel of liberty among the nations of the earth, has increasing need of strong men and women, strong physically, mentally, and morally, capable of the highest civilization, to whom the conditions in our own land, as well as those of the islands of the sea and our new possessions, will not in vain hold out pleading hands in protest against the demoralization of alcoholic liquors.

MEANING OF TEMPERANCE EDUCATION LAWS.

It is God's method that such men and women should now be in training in our schools, and that is what these scientific temperance education laws mean. The popular use of alcohol, usually begun in ignorance of its seductive power, is a menace to that capacity for self-government without which a republic must ultimately perish. A government of the people has no power with which it can compel majorities even when their action is suicidal. It can only educate succeeding generations to right action, and if, in spite of such education, majorities will choose the wrong that destroys, our public school system supported by public taxation has no right to exist, and governments by the people are a failure. But, thank Heaven, they are not, for all history shows that God has so made the human mind that education does influence individual and national action.

That the people should require these schools to teach the coming American how to take care of his health, and why he should not use alcoholic drinks and other narcotics, is legitimate statesmanship whose beneficent effects are already manifest. Dr. George F. Shrady, editor of the Medical Record, New York City, in an article in The Forum, in enumerating recent triumphs in medicine and surgery, mentions this compulsory study as one. He says:

"In forty-one [now forty-three] states of the Union every young scholar educated by the public must learn that rum as a luxury is also a poison; that all excesses are more than counterbalanced by consequent depression; and that, most of all, the human body is the perfection of creation, the gift of God, with the ever-present responsibility of its safe and reverent keeping."

A leading educational paper says:

"Mrs. Hunt has secured the universal teaching of physiology, an accomplishment that Horace Mann placed next to trained teachers and expert supervision," and then adds:

"Certain opponents would overthrow this special education with all it implies of good for the individual and the nation. It is useless to deny the fact that the whole cause is jeopardized unless great wisdom prevails. It is safe to predict collapse unless something heroic is done. If the opposition will not yield can Mrs. Hunt conciliate it?"

OPPONENTS OF TEMPERANCE EDUCATION.

There are several classes of them, as there have been in all great reforms. There is first the honest objector who has been misled on one or more of the points involved, and who is opposed not to what we actually desire taught, but to what he imagines. There is the school official who feels it a reflection upon his administration when petitions are presented for the strengthening of a weak, indefinite law. There is the devotee to his profession who

holds back from accepting a suggestion which does not originate from within his own ranks. There are occasional teachers who have taught solely from the moral standpoint and have failed to secure results because their pupils grew tired and restive under mere exhortation. There is the man who believes the old theories concerning alcohol and will not hear lest he be converted. There is the prejudiced man who reiterates disproved charges, and for whom there is no cure but the death cure.

But over and above all these there is one class of objectors with whom nearly all the current objections have originated, and to whose manipulations and persistent agitation they may be traced by those who have met them often enough to recognize the earmarks.

Fasten the drink habit on a boy and his future money-earning power is thereby mortgaged to the brewer and distiller. Persons having vested interests in such business know this and are natural opposers to such education as may diminish the number of their future customers. Opposition from this source, as met with in the national congress, state legislatures and elsewhere, is usually presented under a pedagogical cover, but it bears the marks of a common source, although all who reiterate the arguments may not know their origin.

STOCK OBJECTIONS.

1. Opposition to the study for any but high school pupils. To conciliate this form of opposition would be to agree that the ninety-five per cent. of the public school children of this country who never reach the high school be left in ignorance of the laws of hygiene, including those which relate to the nature of alcoholic drinks and the danger of their use. This would be profitable for the brewers but not for the country whose strength is in the character of its citizenship which alcohol destroys.

2. The second stock objection originating from this course is against text-books for pupils' use. Why the use of text-books on this subject is more unpedagogical than the use of text-books on such other subjects as geography, history, or arithmetic they fail to tell. To conciliate this form of objection would be to deprive the pupil of an important source of definite information, and since few teachers have time or resources for the necessary special study it would open the way to weak exhortation or to erroneous opinions which would defeat the object of the study. This, of course, is exactly what this class of opposers want.

3. The third objection is to teaching temperance from a physiological standpoint; it is a moral subject, they urge, and should be taught from the moral standpoint only. As well might they clamor to have ventilation taught from the moral standpoint. It is immoral to breathe impure air because it is unhygienic. It is immoral to use alcoholic beverages because they are unhygienic. The only basis for moral instruction in this subject is a physiological one. Brewers and distillers are perfectly willing to have teachers discourse on the evils of drunkenness ad nauseam, provided nothing is said against the nature of alcohol and the danger of beginning its use. To conciliate this class of objectors we should have to be silent concerning the reasons why the use of alcoholic drinks is immoral and give only didactic homilies.

4. Fourthly, these objectors oppose a definite time and place in the public school course of study for instruction in physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics. They exaggerate the proportion of time required for the temperance part, representing it to be five times what it really is, and attributing to one part the time required for the whole study. They cry "repetition" and oppose the only rational way of avoiding repetition, by a carefully graded succession and development of topics. To conciliate this objection is to agree that haphazard is better than order, that here and there and back again is better than logical sequence.

5. These objectors always oppose a penalty to a law requiring this study. "It is an insult," they say, "to school officers and teachers to put a penalty upon failure to teach this branch. They should be left to their own spontaneity of action." To conciliate this form of objection all laws would have to be simply advisory, leaving the matter to the option of the local school committees or school boards. Wherever these can be dominated or manipulated by the liquor element, or where from mere inertia or misapprehension they are not inclined to depart from long usage, they can then fill the course of study so full of other things that teachers can find no time or place for this, however anxious they may be to carry out the provisions of an advisory law. In time of war the defences of a country are not left to the option, nor to the good intentions or spontaneity of local officials, but power is wisely put into the hands of specified officers who must under heavy penalties provide the necessary defences against the enemy. No enemy from without is so dangerous to a people as demoralization from within. No demoralizing agent within is making such disastrous inroads upon the strength of the nation as are alcoholic habits. This instruction is a war measure for the preservation of the country. It would be suicidal to leave this most effectual means of national defence to the doubtful intentions of mere local option.

UNDERLYING PRINCIPLES.

The fact that the majority of public school children of this country are being taught with other laws of hygiene the danger of beginning

the use of alcoholic drinks is the apple of discord in this contention, and we have shown why. If there is no danger in beginning the use of alcoholic drinks, then instruction on that subject should be eliminated from our public school education. But no scientific man whose opinion is worth considering will to-day deny that alcohol is a narcotic having the power, when taken in ordinary beverage quantities, to create an uncontrollable and destructive appetite for more. The sequel of that appetite is told by pathology and the records of crime, poverty, misery, madness and death. While the ability to resist this narcotic power varies with the individual and changing personal conditions, no one can foretell when his ability to resist will cease.

These two facts,—the narcotic power of alcohol, and its power to create in human tissues a cumulative attraction for itself are the Gibraltar, the incontestable proof which science furnishes as a basis for total abstinence instruction. These truths are confirmed not only by science but by bitter experience throughout the centuries. A student of the scientific aspects of this problem who would, to conciliate anybody, consent to withhold these truths from the children whose rightful heritage they are, would be as much a traitor to the coming generations as was Benedict Arnold to this nation in its early struggles for liberty.

CONCILIATION IMPOSSIBLE.

"If the opposition will not yield can it be conciliated?" No, it can not, for at its source the real opposition is to teaching the young the warning truth against the formation of the alcoholic appetite, an appetite which ruins its victims while it perpetuates the brewers' and distillers' gains. Nothing can conciliate such opposition but the elimination of this class of truths from the text-books. For this instruction for the children of this age I have labored without ceasing for twenty years, and am still laboring. The Atwater attempt to discredit these truths has only thrown them into clearer light. The unbiased testimony of the microscope, the scalpel and the laboratory from the old world and the new more and more confirm the lessons our children are learning.

Professors in such medical schools as the Philadelphia Medico-Chirurgical College and the Polyclinic and College for Graduates, the University and Bellevue Hospital Medical School, New York, the Northwestern University Medical School, and such medical periodicals as the Boston Medical and Surgical Journal, the Journal of the American Medical Association, the St. Louis Medical Brief, and the Medical Record testify that the figures in Professor Atwater's own tables do not show that he proved what he claimed. The issue is the boys versus the brewers, and I stand for the boys.

Whatever modifications any of the indorsed books need to keep them abreast with the proved findings of advancing scientific investigation have always been promptly made, and in the future as in the past they will reflect the broadest scholarship.

CHARGE OF COMMERCIALISM.

As no reasonable argument can be brought against this teaching the opposers from the first have charged that it represents commercialism. This has been disproved before the legislative committees of the national congress and forty-three states, yet enemies keep repeating it.

A favorite method with a certain class of men just now is to ignore the fact that these laws have been passed in obedience to the voice of the people, but to make it appear that Mrs. Hunt is the only person interested, and then resort to the chivalric method of attacking her motives. The flings of those unable to appreciate disinterested labors, and the doubts of such as are misled, do not in the least alter the fact that my motives in all this great endeavor are and have ever been the desire to help avert from our people and country the disasters that follow in the wake of alcoholic drinks. The charge to the contrary is one of the enemy's methods to create prejudice and to divert attention from the main question.

It is true that my name and that of the text-book committee of my advisory board are on a large class of these text-books. But these names appear there simply in evidence of the fact that such books have been examined and found to be in harmony with the standard for this literature formulated and signed by many eminent scientists at the time this study was first put into printed form for school use.

THE CERTAINTY OF SUCCESS.

I do not share the fears of half-hearted friends that this movement is doomed to collapse, for back of it are two great forces which have not been taken into account by those who would overthrow it. One is parental instinct. There are few parents, whatever may be their own habits, who do not want their children taught not to begin the use of alcoholic drinks and other narcotics. The other force is the purposes of God. It is within the memory of those still living that some religious journals and many influential people opposed the anti-slavery movement and maligned the motives of its agitators; but, nevertheless, God's great purposes for freedom marched steadily on. Every response to the cry for compromise and conciliation only hastened the day that broke the chains of the slave. God's purposes for emancipation from the slavery of alcohol no man can hinder, none can stop.

MARY H. HUNT, in Journal of Education.

Primary Lesson.

THIRD YEAR.

THE DANGERS IN ALCOHOLIC DRINKS.

"GET the brick ready for the wall," was one of Emerson's maxims; "the day will surely dawn when the wall will have the niche ready for the brick." A master builder selects none but good material. If a piece is cracked or has a corner split off, he throws it aside for another which is better.

Business men are as far-sighted as the architect. They too want perfect material, the best types of men and women, in their employ; hence in every walk of life there is less and less chance for the moderate drinker. He may find a place for the time being, but he is always in losing competition with his total abstinent brother, and sooner or later the alcoholic appetite is likely to be awakened and prove his downfall.

The child does not understand this. He sees no harm in the glass of foaming beer or the cider made from apples in the home orchard, and it is hard for him to realize why these tempting drinks should be unsparingly condemned. Horace Mann long ago discovered that "no one can be driven up a dark avenue, even though it be the right path. We must hang the starry lights of knowledge about it, and show him not only the directness of its course to the goal of prosperity and honor, but the beauty of the way that leads to it."

This must be our method in teaching children to avoid every kind of liquor of which alcohol forms a part. They can not be forced or frightened into temperance principles, but we can and do influence action by showing them the infinite possibilities open to him whose brain is always clear enough to realize their importance, and whose hands are trained to make them his own.

THE DISGUISES OF ALCOHOL.

Temptation to the use of liquor is likely to come upon young people unawares. "A glass of home-made beer will do you no harm; there is no alcohol in that," is an old assertion which will meet them on every hand. Even the child must know how to protect himself against this specious plea, or he takes the first step towards innumerable glasses of beer and the stronger liquors which follow in their wake.

He must be taught through his temperance physiology lessons in school the real nature of alcohol wherever found, and that whatever guise it assumes to tempt his appetite it is always the same dangerous poison.

Prepare for a lesson on this subject with third grade pupils by cutting masks from paper of different colors. Make these as pretty and attractive as possible and bring them into class with you.

Ask what a mask is for. How many have seen one before? When is it used? Why do robbers sometimes put on masks when they break into houses?

Call attention to poisonous weeds which look like food plants. What kind of a mask does the toadstool wear to make people think it is good to eat? the nightshade? What harmless plant does the poison-ivy resemble?

Describe the appearance of pure alcohol. What good liquid does it look like? What kind of a mask does it wear? How do we know it is not water?

Do not bring any form of alcohol into the primary schoolroom. It is not necessary for purposes of description and the children should not be exposed to the temptation of its odor. Instead, draw two glasses in outline on the board, and represent each glass as filled with a clear colorless liquid. Label the first glass water. Ask the children how it looks, smells, and tastes. What is it good for? How do we use it? Write the facts thus brought out under the drawing.

Call attention to the second picture. Label it alcohol. Does it look like the first or unlike it? How is it really different? Supplement what the class have previously learned on this point until they know that alcohol has a strong odor while pure water has none; that it is sharp and biting to the taste, something like red pepper or mustard, and would quickly burn the mouth or stomach if it touched them, instead of quenching thirst as water does; and that while we could not live long without water to drink, alcohol is always a poison.

Put the skull and cross-bones mark on the alcohol drawing, just as other poisons are labeled in a druggist's store. This is alcohol's own proper dress and when it has this on everybody knows what bad stuff it is and no one would think of drinking it, any more than he would let a robber into his house if he knocked on the door and said he had come to carry off the man's goods.

Is that the way thieves do come? How do they get into people's houses? Why do they often disguise themselves? How does alcohol deceive people and make them think it a good

drink? What different masks have you seen alcohol wear? How is the color of a glass of apple-juice changed when alcohol is formed in it? How is grape-juice changed by alcohol?

With crayons of different colors put on the board drawings of a glass of cider, wine, beer or whatever kinds of liquor your pupils have seen and are likely to be tempted to drink. Would any one think these pretty colored liquids could hurt him if he did not know better? Why are these disguises of alcohol so dangerous?

Explain to the children that alcohol is just the same thing when it is found in beer and other liquors as when alone by itself without any mask on. It is not colorless in such cases because it wears the red, yellow, or brown mask of the fruit or grain it has been made from. Beer or cider is not so sharp and biting as pure alcohol, because there is usually but a little of this poison in a single glass, but this little is just as dangerous as far as it goes.

Review by putting on the board in contrasting columns the characteristics of alcohol alone by itself, and in its different disguises, as each is recalled by the children. Colored chalk may be used to advantage for this purpose also.

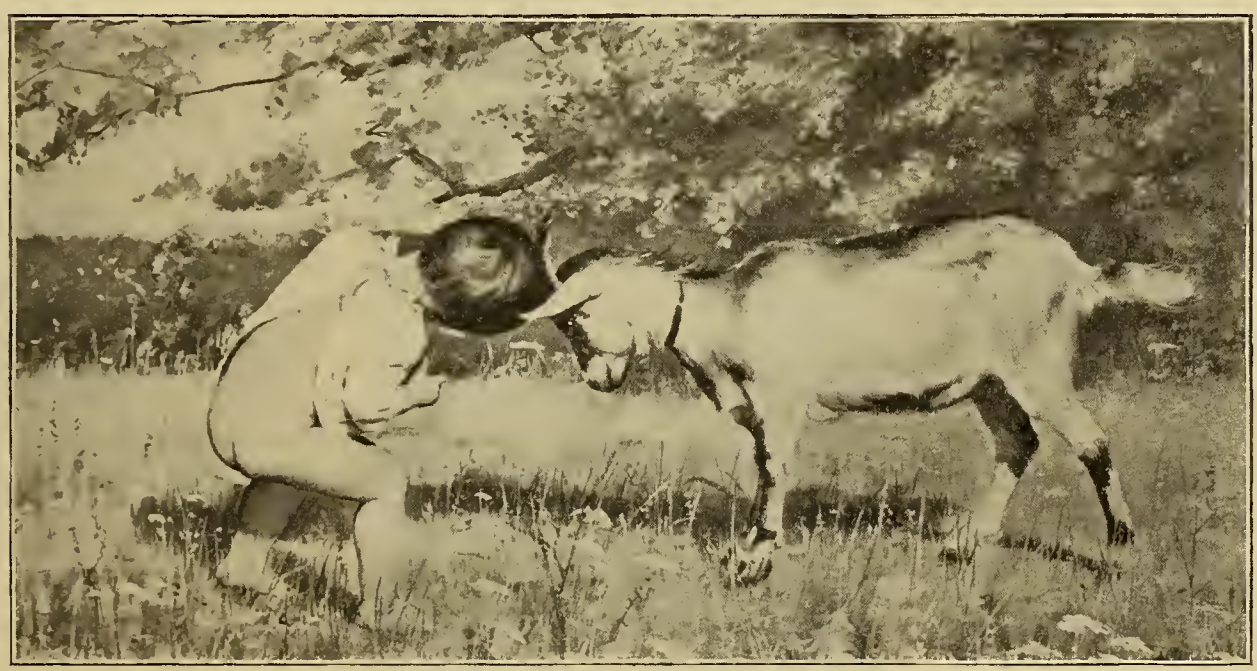
ALCOHOL AS IT REALLY IS.	ALCOHOL IN ITS CIDER MASK.
A clear colorless liquid.	A yellow-brown liquid.
Has a strong odor.	Has a slight odor.
Has a sharp, biting taste.	Much less biting to the taste.
Is a poison.	Contains some of the poison alcohol.
Burns the mouth and stomach.	Makes the mouth and throat tingle.
A very little is injurious.	A little is dangerous.
Large doses will kill, almost immediately.	Has the power to make people want more and more.

Have similar descriptions of the other disguises of alcohol put on the board until all the class know why each is always dangerous and why they have deceived so many people.

THE WORK OF ALCOHOL.

Ask the children what a burglar does when he gets into our homes. What has he come for? Does he leave us poorer or richer when he goes away? Alcohol is a thief too, and whenever he gets into our bodily houses in one of his disguises, he always robs them of something precious.

What are some of the things that alcohol can steal from us? There is no room in our bodily houses for carpets and china and silver. Instead they are furnished with things a great deal more valuable than we put into houses of stone or wood. Let us think what some of them are. Bring a large doll into class and ask the children in what ways they are different from the doll. What can they do with their hands which the doll can not? With their feet and legs? How much larger is the doll this year than last? How much taller? How many in the class have grown in both these ways? Why would we rather be ourselves than like the doll? What have we that the doll has not?



"I guess I'm stouter than you."

Collect from the children as many answers as you can to this question and write the best on the board:

Stout muscles.	A strong heart.
Firm bones.	Sharp eyes.
A clear brain.	Keen ears.
Quick nerves.	Steady hands.

All parts of the body already studied by the class should be recalled and named in this connection as part of its furnishings. Have the children think why these are more valuable than

the furnishings of houses. Which can we replace if they should be injured or stolen? Which can we not get along without? Which will alcohol steal from us if it gets a chance?

Find how many in the class have seen a deserted house. How did it look? Put a picture of one on the board as the children describe what they have seen,—the walls cracked and crumbling in places, windows broken so that the rain and storms beat in, doors off their hinges, and everything of value which was once within carried off or destroyed. No one would want to live in such a forlorn place. What kind of a home would we have if we could choose for ourselves?

Copy on the board as far as practicable the suggestions of the class in reply, making this second drawing cozy and homelike, in strong contrast to the first. Which is more necessary to have, fine-looking houses to live in, or strong healthy bodies? What kind of bodies will we be likely to have if alcohol gets a chance to slip into them? How will it spoil the framework? the furnishings? Opposite the parts of the body already named on the board, write as many of the ways in which each may be harmed or spoiled by alcohol as you have time to explain, or as the class can remember.

ALCOHOL ROBS OUR BODILY HOUSES BY

Changing muscle to fat.	Weakening the heart.
Stopping the growth of the bones.	Hurting the eyesight.
	Blunting the hearing.
Clouding the brain.	Making hands and feet unsteady.
Dulling the nerves.	

Who wants to have his bodily house robbed and injured like this by alcohol? It doesn't seem as if it could do so much harm when it comes to us all dressed up in a beautiful wine or cider mask, and we are urged to try just one glass, but we can never trust alcohol any more than we could any other robber, so we must learn to say no, no matter how tempting it looks. We can let it entirely alone, then we are always safe; but if alcohol once gets into our bodily houses it is almost sure to stay until it has robbed us of strength and beauty and manliness, and left only a worn, broken-down shell of a man or woman.

REMEMBER THE GOAT.

Jasper opened his eyes one lovely summer morning and found the sun shining into his room. He jumped up and ran to the window. The ground was covered with daisies all in blossom.

"I'll pick some for mamma," thought the little fellow, and without waiting to be dressed he ran down stairs and out into the field near the house.

Somebody was there before him. A neighbor's goat had strayed into the field and now claimed it as his own property. He wanted no little boy there picking flowers.

The goat put his head down and pushed. So did Jasper. "I guess I'm stouter than you," thought the boy.

The goat thought the same thing about himself. He pushed harder and harder until Jasper was glad to take to his heels and run home, leaving Mr. Goat in full possession.

"Why didn't you go somewhere else for flowers?" said Jasper's father when he heard the story. "There was no goat in the next field."

"I thought I could drive him out," said Jasper, "but I couldn't. He drove me."

The next day Jasper and his father took a long walk. It was very hot, and they both were tired and thirsty before they got back. By and by they passed a little restaurant with this sign in the window, "Ice cold beer. Five cents a glass."

"Oh, do let's have some," said Jasper. "It'll taste so good."

"Look out," said his father, "there's a goat in there."

"Where? I don't see any."

"I didn't mean a real live goat, but something that might be too strong for you to resist if you once gave it a chance. One glass of beer might not hurt you very much, but I never saw any one who took the first glass and stopped with that. Those who begin to drink beer usually keep on taking more and more until they can't let it alone. The appetite for it gets too strong for them, just as you found yesterday that the goat was stronger than you. When any one asks you to take just a taste of beer or any other liquor with alcohol in it, just remember the goat and say, "No, thank you."

"I will," said Jasper.

AUTHORITATIVE QUOTATIONS.

ALCOHOL STUNTS GROWTH.

Alcohol is never necessary to living things, it can not build up tissue and is antagonistic both to life and growth.—W. N. Edwards, M.D., F.C.S.

Children never should take alcohol. According to the highest authorities it exerts an exceedingly deleterious action on rapidly growing tissues, interferes with their nutrition, and prevents the development of their proper functions. —Professor Victor Horsley.

ALCOHOL CAN NOT TAKE THE PLACE OF FOOD.

The real food value of beer is easily demonstrated by the weakness and feebleness which overtakes those who take it to the neglect of real food, and who at length develop delirium tremens.—[Medical Temperance Review.

A man is obliged to drink a whole barrel of beer in order to get two teaspoonfuls of nourishment for the body. Moreover, people who

drink liquors to get this wee bit of nourishment do it at a great cost.—A. MONAE LESSER, M.D.

ALCOHOLIC DRINKS GIVE NO STRENGTH.

Men who use spirits are incompetent to do any form of work requiring care and exactness. —[Quarterly Journal of Inebriety.

No other substance known in common use has such a profoundly destructive action on the waste and repair of the body as alcohol. It opens the door to a great variety of diseases by destroying the power of resistance, and enfeebling all the powers.—T. D. CROTHERS, M.D.

I find that alcoholic drinks give no strength. They build up no muscle, but destroy its power and make it less active for work.—SIR B. W. RICHARDSON, M.D., LL.D.

THE DANGER IN BEER AND WINE.

Most drunkards commence on beer and wine, and finally drink the stronger beverages. A beer drunk is the worst kind of a drunk.—L. D. MASON, M.D.

I find in the majority of instances the moderate use of alcoholic liquors leads to an excessive use of the same, as also to the use of the stronger drinks, therefore the use of light wine and beer is dangerous.—J. F. KENNEDY, M D.

THE SILVER LINING.

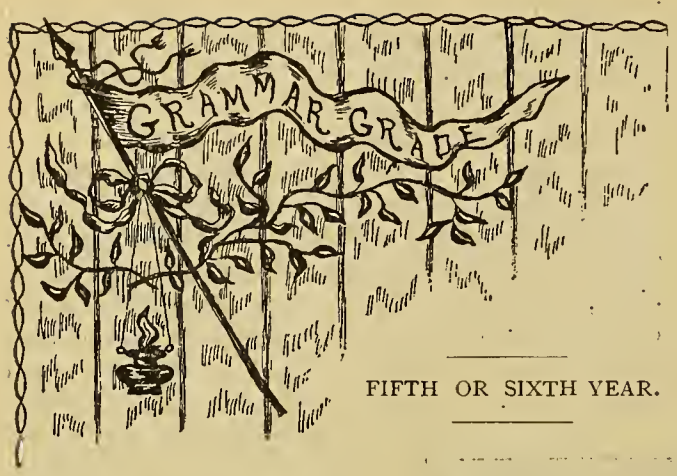
IT was March 1st, 1900, at the annual meeting of national superintendents of schools, in session at Chicago. The battle for and against the study of scientific or physiological temperance, opened with Professor Atwater's paper, had waged a day and a half. In this battle I had had my say and was returning in the twilight to the beautiful hospitality of the Chicago home I was to share till the morning train should take me east again. Two blocks away from my hostess' door, the transparent ice that sheeted the broad pavement before a handsome mansion gave no sign in the evening gloaming of danger to the most sure-footed. A little sand, sawdust or ashes always obtainable, sprinkled on that ice would have prevented my fall and its sequel.

Despite the faint sickening sense of suspended vigor I struggled to my feet to find my left arm hanging in helpless bewildering pain at my side. My left elbow had first struck the hard icy pavement with such force as to dislocate the shoulder and cause a slight break in its socket. A passer-by helped me to my friend's door. The days and nights of pain that followed were lightened by tenderest care. The lives of my host and hostess, Mr. and Mrs. Case, are in all good work beautiful earthly expressions of the great heart of the divine love that ever throbs in tender sympathy and helpfulness. For all the kind things they said and did for me I shall ever thank them and the all Father whose bountiful almoners they are. The conscious presence of the great Healer, the skill and gentleness of the good surgeon, the care of the trained nurse, the beautiful roses, violets and carnations with which Mrs. Hobbs and other friends lightened my chamber, the many messages of loving, prayerful sympathy from white ribboners and others all constituted an atmosphere and conditions which made it easy for blood untainted with tea, coffee or narcotics of any kind to repair the broken tissues; for nature is ever striving to mend the wounds of man's making. Thus, three weeks and one day from the time of the accident found me on board the Chicago Limited en route for Boston, and the journey of one thousand miles, thanks to modern methods of travel, was accomplished in twenty-eight hours and with less suffering than I feared.

"The voice of one who goes before to make
The paths of June more beautiful, is thine,
Sweet May."

My joy on reaching home was equalled only by my gratitude for all the kindness the accident had evoked from the hour when it transpired. How beautiful is human kindness! I exclaim again and again as I think of it all. It is an expression of the Christ spirit as he still abides with the children of men. When that spirit shall fill all hearts how radiantly glorious human intercourse will be. For that we are working as we labor for the education of coming generations in truth that warns and leads away from the hardening besotting influence of alcohol and other narcotics.

MARY H. HUNT, in Union Signal.



FIFTH OR SIXTH YEAR.

THE COVERING OF THE BODY.

ONE has but to recall the large number of those making a handsome living from the sale of complexion nostrums, to find how deeply implanted in the human mind is the longing to be beautiful. "Handsome is that handsome does" may appeal in theory to young people, but if given their choice in the matter the great majority would run their chances on good looks rather than good actions.

This desire is legitimate and to be wisely encouraged rather than suppressed. We owe it to ourselves and to our neighbors to cultivate the graces as well as the virtues of life, and high among these is beauty of face and figure. Nature has not endowed her children equally in these respects, but she has given possibilities to each and it lies with the individual how far they are to be developed.

There is reason for the old proverb "beauty is but skin deep;" for just as the perfection of one's attire is determined by the material and cut of the clothing he wears, and its harmonious arrangement of color, so personal attractiveness is largely dependent upon the texture and appearance of the skin.

To give this part of the body the care it needs we must know something of its nature and its relation to other parts. The first step, therefore, is to study

THE WORK OF THE SKIN.

Read to the class Longfellow's description of Julius Cæsar, as found in his "Courtship of Miles Standish." How many things could this great general attend to at the same time? How many of us can do more than one thing at once? Can most machines do more than one kind of work?

Bring out by class discussion how hard it is for most people to do even one thing well, then turn to the physiology topic for the day. Ability always commands respect, and when the class find that a part of their own bodies can do easily so many more things than they have dreamed of, they will be interested to care for it as it needs. Consider first what the skin is for. Help the class to find by observation and experiment what different kinds of work it is always doing at the same time. Ask how many have ever cut or burned any part of their skin. How did the injured part feel? What use of the skin is shown by such an accident. Ask the class to imagine the room they are in is too warm. How could they cool it off? Opening doors and windows or the ventilators will be suggested. How is the body cooled when it gets too warm? Have ready a magnifying-glass and with it show the millions of tiny pores or ventilators everywhere in the skin. Here is another very important work, to see that all these pores are open when the body is getting too hot and closed again when it is cool, thus keeping it at just the right temperature day after day, year after year. How is all this work attended to?

Where does the dirt come from which we find on our hands and face and body every day? Not all of it is outside dust by any means. A great deal of waste matter from within our bodies passes off in this way, just as scum rises to the top of a kettle of soup or preserves and has to be skimmed off. What is this work of the skin called?

How many have ever had their shoes or gloves soaking wet? How did they feel afterward? How can we make them soft again and fit to wear? Why does not our skin get rough and hard every time it is wet? Why does our hair look glossy after a thorough brushing. Draw on the board a section of skin magnified to show the oil glands and briefly explain their use. What new work of the skin have we discovered in this way?

How do one's hands look after doing a washing or after being in water for some time? What has happened to them? What takes place when we lay a bit of paper or cloth in water? Show again through the microscope the pores in the skin and compare with those in the paper and cloth. How do we know that the skin can absorb liquids?

Call different ones before the class and ask each in turn to close his eyes and tell the shape of a block or any small object by handling it. How much can we know about an apple by touch alone? How can we find whether a piece of iron is hot or cold? Whether a rubber ball is heavier or lighter than one made of wood? Where is the sense of touch?

Sum up this work of observation by asking the class to write on the board or on paper the various kinds of work which they have found that the skin does.

The skin
- covers the body.
- regulates the heat of the body.
- removes waste matter from the body.
- oils the body.
- absorbs moisture.
- gives us the sense of touch.

These topics may be used as the basis for several text-book lessons in which the class gather all the facts they can find regarding the work of the skin. Direct their study by placing under each topic questions to suggest what is most important. The following may be used:

How does the covering of animals differ from that of man? Why do we need clothing while animals do not? How are sheep protected from the cold and wet? How are birds protected? the dog and cow? Describe the skin of a fly, a caterpillar, a snail. How is the skin protected at the ends of the fingers and toes? What keeps our skin from wearing out as our clothes do?

How is the body kept at nearly the same temperature all the time? Why do we feel hotter at some times than others? How do the pores of the skin look when we feel very warm? When we are cold? How should the clothing we wear in summer differ from that we wear in winter?

How does waste matter from the body get through the skin? Why are both warm and cold baths necessary? How does perspiration differ from water? In what ways are the sweat tubes of the body like the drainage pipes of a house or city? What happens when either becomes stopped up?

What other tubes are there in the skin besides those which carry off perspiration? How does the skin oil itself? Why is this oil needed? What does it do for the hair? Why do our hands and face often chap and grow rough in cold weather? How can we keep them soft?

"Thou shalt not lack
The flower that's like thy face, sweet Lavender."

Why is it dangerous to handle poison-ivy? What kinds of substances can the skin absorb? In what ways is this absorbing power a good thing? How is it dangerous?

Which sense has its seat in the skin? What kinds of work help to make it more delicate and sensitive? How can a blind person read with his fingers? What can we know of the shape of an object by touching it? What can we tell of its size? weight? the material it is made of? its temperature?

THE CARE OF THE SKIN.

A child's skin is usually fair and smooth. When he reaches the border-land of youth and begins to think of his personal appearance, he is often mortified to find his face marred by pimples and blotches. These blemishes are due in many cases, to rapid growth. The youth eats and exercises more than formerly, and consequently more waste matter is formed in his body. The skin must do its part in getting rid of these impurities, and hence needs extra care to fit it for this additional work. The child does not know the close relation between cleanliness and beauty. It is too often ignored in the home. The teacher, therefore, must assume the delicate task of enlightenment and give explicit directions as to the proper care of the skin, hair and nails, at the same time explaining why young people need to be more particular in these matters than children.

The common factor in all directions sent out by any firm professing to cure skin diseases or blemishes, and often the only one of value, is the careful bathing insisted upon. If the skin is kept perfectly clean, and the child is fed on simple, easily digested food, with no tea or coffee, and few spices, pickles or sweets, there will be little need to worry over the complexion.

Read to the class descriptions of the public baths of ancient Rome. Then take up the subject of bathing and cleanliness, considering such questions as these:

Where does the waste matter constantly found on the skin come from? How does a lack of cleanliness hinder the work of the skin? If the skin is unable to do its own work properly, what other organs of the body must do double duty?

What is the best time for bathing? When is a cold bath beneficial? How should it affect the body? When should warm baths be taken? What kind of soap should be used? How can we exercise the skin? Why does it need exercise?

Show the work of sunshine in giving a clear rosy complexion, by comparing the appearance of a plant kept for several days in the dark with another given plenty of light. Make this experiment practical, by requiring the girls as well as the boys in your class to spend at least an hour every day in the open air.

Find whether the class know how to care for the nails. Explain by a drawing on the board how the nails should be trimmed, and how the skin about the roots should be treated to prevent hang-nails.

Study with your pupils the relation of foods to the skin and complexion. Suggested topics to study in this connection are:

How is the skin kept in repair? How does the skin get its share of the food we eat? Why does too rich food tend to injure the complexion? What articles of diet make the best food and help to give the fairest complexions? How should our diet differ according to the season of the year?

The blotched and congested skins of those who habitually use alcoholic liquors, and the sallow complexions of the cigarette smoker tell their own story, which he who looks may read. The attitude of the teacher on these questions and the skill with which she handles the subject will go far toward deciding the habits of her pupils. Study it with your class with the inevitable law of consequences in mind, and with the determination that your pupils shall know all that science and observation can teach of the baleful effects of these narcotic poisons.

After a text-book lesson on these topics, review by a study of the quotations which follow, asking all in the class to make out lists of questions covering points in the quotations which they do not understand or which they would like discussed more fully. Show them how to do this by analyzing one or more of the quotations for them, perhaps as follows:

What is tissue? Where is it found? What kinds of tissue is the skin made of? Why does it need repair? How is it repaired? Why is alcohol of no value for this purpose?

Where do the waste matters in the body come from? How does the presence of alcohol in the body hinder it in getting rid of these wastes? What harm is done when waste matter is kept in the body? How does alcohol injure living tissue? Why do alcoholic liquors cause skin diseases?

Why is the face flushed after drinking liquor? Why is not this a sign of health? How does the constant use of beer affect the looks of the skin? Why do the use of alcoholic drinks often cause itching of the skin and eruptions?

What is the harm in an occasional glass of beer or cider? Why is it easier to drink the second glass than the first? Why is it dangerous to begin the use of any alcoholic liquor?

What causes the pallid skin of the smoker? What nerves does tobacco affect? What important work of the skin is hindered by the use of tobacco? If tobacco is a poison why does it not kill the user at once? How does it injure the complexion? What other parts of the body does it affect? What is mucous membrane? Why is it necessary? Where is it found? How is it injured by tobacco? How many people do you know who have once used tobacco and afterwards given it up? How many do you know who would like to give it up but can not? What is the only safe course of action regarding it?

AUTHORITATIVE QUOTATIONS.

ALCOHOL FURNISHES NO NUTRIMENT.

For the growth of tissue, for purposes of development, and for the repair of the waste of the tissue of organs, nitrogen is a necessity. It is absolutely certain that alcohol can not furnish this material. — W. N. EDWARDS, M. D., F.C S.

ALCOHOL HINDERS THE WORK OF THE SKIN.

Ethyl alcohol in the blood hinders the elimination of the carbon and nitrogen wastes. Hence the blood becomes laden with crude materials, tissue waste and tissue poisons.— JOHN C. CUTTER, M.D.

ALCOHOL CAUSES SKIN DISEASES.

Skin diseases take place from the habitual use of distilled liquors, wines and brandies.— CHARLES H. SHEPARD, M.D.

Alcohol, if applied to the skin, is an irritant, and if persisted in will cause ulceration of the skin.—[Journal of Hygiene.

EFFECT OF ALCOHOL ON THE SKIN.

When an alcoholic drink is taken, it circulates with the blood and frequently causes congestion of the skin, predisposing it to various forms of skin eruptions, causing much discomfort, itching and burning of the skin.—W. E. BALDWIN, M.D.

EFFECTS OF TOBACCO ON THE SKIN.

Perhaps one of the most characteristic effects of tobacco is the excitation of the vaso-constrictors produced by it, as is evidenced by extreme pallor of the skin.—J. H. KELLOGG, M.D.

Tobacco is one of the slowest and surest poisons to the human race. — C. H. POWELL, M.D.

TOBACCO INJURES THE COMPLEXION.

I have known of one student who had a muddy and leathery complexion, poor physical condition, and sluggish mental action, largely or entirely the result of the excessive use of tobacco. — A. W. HARRIS, President Maine State College.

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BLIND LEADERS.

THE dullness of apprehension, the pride or prejudice that fails to grasp a pending crisis has been the bane of many a critical hour, while the opposite has brought to our times and to all the years untold blessings. As he stood on the banks of the Delaware, Washington's prophetic soul recognized the fateful moment and knew that in spite of cold and ice the stars in their courses fight for him who fights for righteousness. Wellington at Waterloo, Grant in the battles of the Wilderness knew that then and there ghastly wrongs were dying, as they struggled for the victories by which a military despotism and an odious slavery were to perish.

But when Philip of Spain forbade any hint of the Reformation following Luther's teaching in Germany to be published in Spain, or to be read by a Spaniard; when Louis XIV. of France dragooned the least staunch of the Huguenots into accepting a faith they did not believe, and by a revocation of the Edict of Nantes drove the incorruptible to other lands, two short-sighted monarchs, although they knew it not, were limiting the future of Spain and France.

The men entrusted with the supervision of public education in this country were in session at Chicago, and before them for discussion was a study of such importance that the people of the United States, except in Utah and Georgia, have said it shall be taught all the children in their public schools.

Great experts have exploded as unsustained, even by his own figures, Professor Atwater's claim that his experiments had proved the present temperance teaching false. There must have been many superintendents present who knew this but they gave no sign. Instead, contemptuous allusions to this study and its promoters punctuated Professor Atwater's paper and those of other speakers. Childish complaints, implication of motives and distortion of facts concerning the organized public sentiment back of this movement took the place of that scholarly discussion of the subject one had the right to expect. The speech of Superintendent Sabin of Iowa was the only utterance that showed any comprehension of the times in which we are living, and of their demand for this study. To this, however, should be added one exception, that of a young man from Champaign, Illinois, who in apologizing for the applause given the Atwater paper presented his testimony to the good that had resulted in his community from this study since the amended Illinois law had made it mandatory with other branches. It was rumored that there was an agreement among the superintendents to make no temperance speeches lest they offend some "friend at home."

The loudly applauded idea that what should be taught in the public schools should be left to educators and teachers, that legislation and suggestions on these points from outside are intrusive, showed a pitiful lack of comprehension of fundamental principles. Governor Morton refuted these notions in his admirable state paper handed down with his signature to the amended temperance education law of New York in 1895. He said:

"The Constitution requires 'The Legislature to provide for the maintenance and support of a system of free common schools, wherein all of the children of the state may be educated.' The power to establish schools implies the power to prescribe the course of study therein, and what those courses of study shall be must be largely a matter of legislative policy."

I think too well of my countrymen, and on reason, to believe that the apparent attitude of these Chicago superintendents on this subject represents the sober second thought of the educators and teachers of this country, otherwise I should despair of the republic. That there were Christian patriots, God-fearing, child-loving men and women in that audience of superintendents I am sure. If there was a seeming lack of conviction and a flippant handling of a vital subject let us hope that it was due only to lack of thought and knowledge.

Study this subject, friends in the educational ranks. You owe it to yourselves, your calling, your country, and your age to do it. Do not throw into the waste-basket everything that comes to you on this question. It is not old and threadbare, but the freshest of all topics. Pardon me for saying that possibly what you know about it needs revising. Study it with reference to teaching its truths to the childhood of this nation whose future lives you are molding. A glorious opportunity has come to you so to shape that future that our nation will be delivered from its greatest evils.

The parental instinct that has demanded this legislation will support you in its enforcement, and more than all, the God of nations will provide the way.

PHYSIOLOGY IN THE PUBLIC SCHOOLS.

THERE is an idea, prevalent among some educators, that the teaching of physiology in the public schools is a failure. They argue against that feature of the law requiring the teaching of this study "which in every division of the subject shall include the effects upon the human system of alcoholic stimulants, narcotics and poisonous substances."

Before condemning either the law or the teaching, it is well to consider some facts in regard to each which seem either to be misunderstood or totally ignored.

1. The law does not require that every pupil should study physiology every day throughout the entire time covered by the course of study. Chapter 1, Laws of 1886, Sec. 1, declared that it should be regularly taught to pupils. Regularly taught is construed by the best authorities to mean, as other branches are taught. Substantially the same idea was carried into the new code (Sec. 2775). "The instruction in this branch shall of its kind be as direct and specific as that given in other essential branches." Again, the "regularly taught" is controlled by the school board. If they see fit to extend it through the entire course, they may; if they choose to limit it to one year, may they not do so? The law, then, is moderate in its meaning and is certainly justifiable in the end sought. The study of physiology was considered essential—a very wise consideration.

2. The teaching of physiology depends for its success upon the common sense and judgment of the teacher and the board. There are few Bellerophons who will find Pegasus and capture the Chimera. Yet the fact that all desirable may not be attained should never be a bar to doing all that one can do. Much good has been, and is now being accomplished in this study. If the goat's head has been cleft in twain, another stroke will sever the lion's scalp and finally the snaky fangs will char and crumble. It is a good work, let it go on.

The reasons given by some for the imagined failure of the law and the teaching would provoke a smile even upon the countenance of Nestor. Some of them, in which the sensible teacher finds that the "reasons are as two grains of wheat hid in two bushels of chaff," are:

"The law is absurd because it attempts to teach science to young children." Is this a tenable objection? If physiology, in any of its parts, is rejected on this ground, then we must exclude from the lower grades all nature study, arithmetic, language. If there is an educator in the state who does not realize the great value of the study of elementary science in early youth, he certainly is a Rip Van Winkle.

Some one says that it requires a physical science to be taught theoretically, by book, instead of objectively, by experiment and analysis. Will the objection stand? Theory is an essential part of the study of any science. Even objective study, without intelligent guidance from the theoretical standpoint, is largely fruitless effort. A text-book in the study of any science is indispensable. It is peculiarly so in physiology. The experimental study of it requires the dissection of living beings, and this kind of practice is rapidly coming into disrepute. Bloody science is a thing of the past.

Our objector protests that "it asks pupils to believe words read in a book or told by the teacher in opposition to facts seen and known by the pupil, saying that tobacco is poisonous, while the pupil sees seven-tenths of the men he knows using tobacco, and his answer to the teacher is, 'Mr. X— smokes and he is the richest and smartest man in town, and I am going to smoke when I get big enough!' or saying that alcohol is poison, while the pupil says, 'All our great men, congressmen, governors, judges, lawyers, merchants and lumbermen drink liquor, and I mean to drink when I am big enough.'" Again the objection is untenable and ridiculous. The facts seen and known by the pupil are not in opposition to the teaching of our text-books and teachers, but serve to corroborate them in every particular. True it is that many people use tobacco, but we shall have to hunt long before we find one that will recommend it to others. If one really thinks that tobacco is not harmful, let him recall the first experience in its use. We wonder if the advocates of such a ridiculous objection as this will not soon go a step farther and encourage the use of it on the schoolground and in the schoolroom. It seems much like advocating the policy, "When in Rome, do as the Romans do." Bad habits should never be imitated. Even if a large majority of men do use the weed, that is no argument that it should be used. It is an abominable policy to inure children into hardships and bad habits because they will have to meet them in life. When the pupil says, "All our greatest men, congressmen, lawyers, drink liquor, do not tell him point blank, that he lies, but insinuate very plainly that he is badly mistaken. The best and greatest men the world has ever known, Lincoln, for example, never touched the "accursed cup."

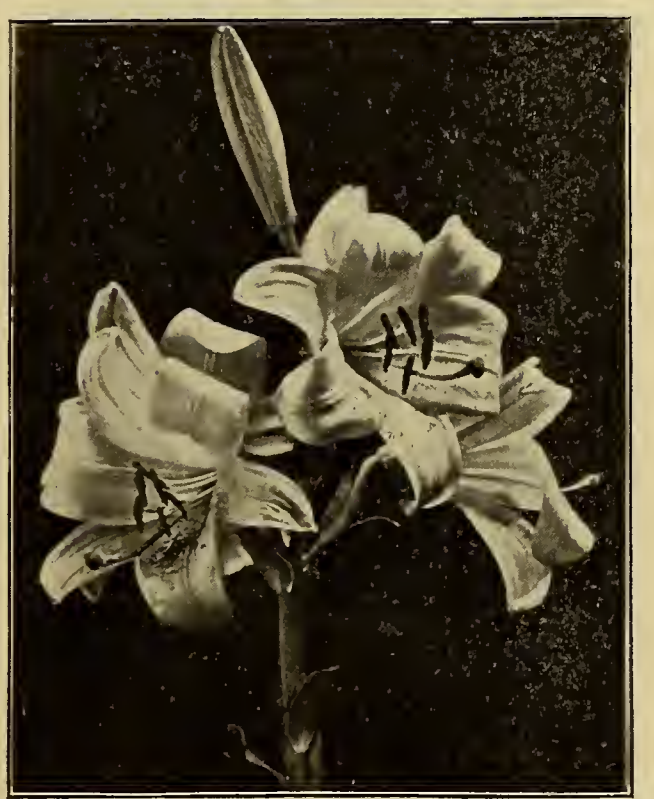
Another says, "It assumes the false notion that knowledge of the results of certain courses will hinder humans from entering these courses." An ordinary observer will readily detect the error of such an objection. Not many will be persuaded that the notion is false. We are aware that knowing what is right is not always followed by doing what is right, yet knowing what is right always exerts a beneficial influence.

It constrains many to walk uprightly. Its influence is good. It is the "inhumanes" that are not hindered from entering these courses. Knowledge of the result of courses is sure to influence one in action. A man discovers that a certain investment will bring him a good profit. Does it not influence his action? A sensible man, having learned that the fire will burn, does not put his hands on a red-hot stove. —S. G. RICHARDS, in the Iowa Normal Monthly.

"The bud shows green on the wild-rose spray,
And everything's happy because it's May,
Sweet May!"

Robins in the tree-top,
Blossoms in the grass,
Green things growing
Everywhere you pass;
Sudden little breezes,
Showers of silver dew,
Black bough and bent twig
Budding out anew;
Pine-tree and willow-tree,
Fringed elm and larch—
Don't you think that Maytime's
Pleasanter than March?
—T. B. ALDRICH.

Sunday afternoon, April 8th, Rev. Joseph Cook delivered a powerful address on Scientific Temperance Instruction —Its Friends and Foes, before an audience of more than two thousand people in Tremont Temple, Boston. Mr. Cook spoke with all his old-time vigor and earnestness. He paid high tribute to the present temperance teaching in the public schools and its possibilities, declaring that practical experience and the latest German scientific investigations substantiated this teaching. Mr. Cook closed his address with the stirring poem, "Webs and Flies," which appears below. Mr. Cook says this poem in its original form was written some years ago near Niagara Falls, after a lecture tour in which he had seen much of the rule of the whiskey rings in American cities from sea to sea. The pen-holder which he used to sign the hymn he had cut from the bough of a tree over the martyr Haddock's grave.



"Welcome, maids of honour,
You doe bring
In the spring,
And wait upon her."

WEBS AND FLIES.

A Battle-Hymn for Temperance.

Whiskey spiders, great and greedy,
Weave their webs from sea to sea;
They grow fat and men grow needy,
Shall our robbers rulers be?
"Ambushed poison, fools' elation!
Teach what peril in them lies:
Sweep the webs away!" the Nation
In its wrath and wisdom cries.
Teach and sweep and bury deep;
And God His watch above us keep.

Teach and sweep! Less now is blunder.
Let the schools bring noontide near;
Let the church sound seven-fold thunder,
But the webs must disappear.
Treacherous architects of plunder,
While the spiders ply their loom,
Light and lightning never sunder;
Both we use as torch and broom.
Teach and sweep and bury deep;
And God His watch above us keep.

Loops that timid statesmen strangle,
Politician's lasso dread—
Harlot's lure and gambler's tangle,
Weave the spiders with their thread.
Widows, orphans, paupers, taxes,
Hang enmeshed within the net;
Madmen, riots, battle-axes,
Souls whose sun of hope has set.
Teach and sweep and bury deep;
And God His watch above us keep.

Up! the webs are full of slaughter;
Fiends infest the spiders' lair;
Up! wife, husband, son and daughter,
Make the vexed earth clean and fair.
Where now red-fanged murder burrows,
Let glad harvests wave sublime;
Sink the webs beneath new furrows,
In the fateful fields of Time.
Teach and sweep and bury deep;
And God His watch above us keep.

Boston. —JOSEPH COOK.

"Spring's last-born darling, clear-eyed, sweet,
Repeats her song of 'May.'"

THE BUILDING OF A NATION.

VIII. THE TEMPERANCE QUESTION.

TURN the kaleidoscope of our national life whichever way we will, among the many bright colors one dark spot ever appears marring the beauty and perfection of each design. It is the mark of alcohol. The student of social conditions finds alcohol the source of much of the misfortune, misery and degradation for which he is seeking a remedy; the economist sees it wasting resources, ruining earning ability, taxing state and nation without adequate return to support the paupers and criminals it has made. Commerce carries it with all its evils to every corner of the land and even to distant quarters of the earth, ruthlessly thwarting the labor of those who with self-sacrifice and infinite pains have brought some light to regions of ignorance and sin. Politics affords it a constant field for action. To preserve and extend its interests it is ever on the alert, seeking to control the law-making and law-enforcing power through the weaker elements in men and parties. Church and state, home and school, private life and public morals — none of these escape entirely the blight of strong drink.

The early colonial settlers of America brought with them the drinking customs and beverages of their respective nations, and the scanty records of those days show that even then some measures for lessening intemperance were felt necessary.

Nearly every home had one or more favorite drinks, known as flip, toddy, egg-nog, punch, cider, wine or apple-jack, while the brandy brought in by white settlers wrought special havoc among the Indians who became very fond of "strong water." Mild restrictions were placed upon the public houses where drinks were sold, with the idea of preventing the immoderate use of liquors, but in spite of them the consumption steadily increased. Soon after 1700 New England began the manufacture of its famous rum which became a popular beverage and did much to increase the drink habit. Rum became also a chief article of export, and in later years was always associated with the slave trade, being given in exchange for the slaves sold from the coast of Africa into American bondage. In the French and Indian War, and again in the Revolutionary War, liquor was freely supplied the soldiers under the illusion that it would warm and strengthen them. The soldiers thus accustomed to the use of intoxicants did not abandon the habit when the wars were over, but continued them at home, helping both by practice and by influence to make drinking more general. People of all classes drank freely. In sickness the resort was had to the glass as a medicine; in health it was the ever present accompaniment of social courtesies. Marriages and funerals, christenings and ordinations, the most solemn as well as the most joyful occasions alike required abundant and elaborate provision for quenching thirst. Some one has said, "Ardent spirits were almost as common as bread and were generally regarded as nutritious and indispensable. Cider was deemed as necessary a part of the family supplies as potatoes, and six or eight barrels were considered a small quantity for a family; while some went as high as twenty or thirty barrels."

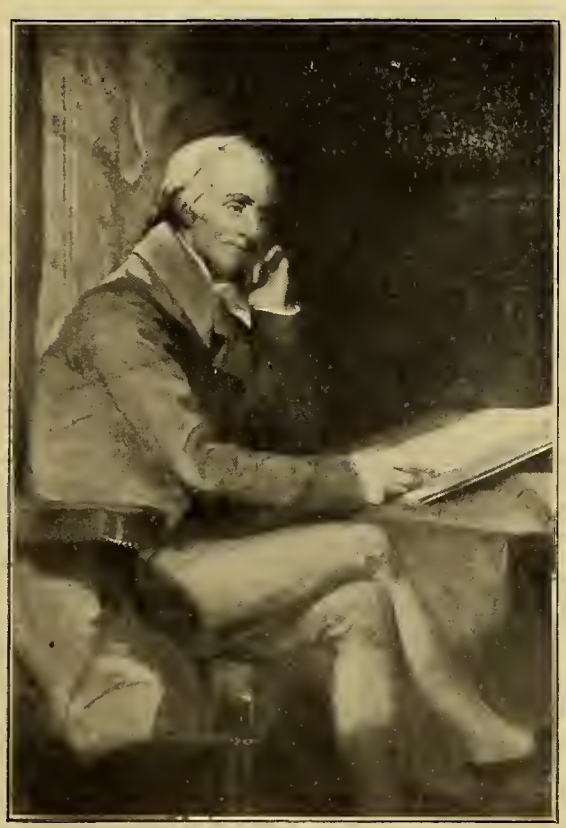
In the midst of this widespread indulgence, an indulgence based for the most part on ignorance of the nature of alcoholic beverages, there were some who saw clearly the consequences already falling upon individuals and communities in the form of degradation and poverty. Benjamin Franklin and John Adams tried by word and practice to stem the evil, but with little success. Fifty years later Adams said, "By my efforts I only acquired the reputation of a hypocrite and an ambitious demagogue."

But other forces were at work. During the Revolutionary War, Dr. Benjamin Rush of Philadelphia, a physician of world-wide reputation and a signer of the Declaration of Independence, prepared a pamphlet for soldiers in which he strongly condemned the use of alcoholic beverages in the army. He declared that far from giving warmth and strength, they so weakened the constitution that by their use the body became more susceptible to heat, cold and disease.

Some years later, in 1785, Dr. Rush published another work that has been said to mark the definite beginning of the temperance reform, a pamphlet on the "Effects of Ardent Spirits on the Human Body and Mind." During the remainder of his life he made earnest and repeated efforts by his pen and by personal addresses before influential gatherings, religious and secular, to arouse the public to a sense of the great evil that was abroad. He opposed, however, only the use of distilled liquors. Wine, cider and other fermented drinks he considered harmless; so much was the best scientific knowledge of a century ago below what every school child knows to-day.

In 1808, more than twenty years after the first publication of Dr. Rush's pamphlet, a copy of it came into the hands of a young physician in a little New York village who, stirred by what he read in its pages and saw in his daily practice, organized what is believed to have been the first temperance society in the United States, that is, the first organized effort to check the evils of intemperance. In the same year the famous Dr. Lyman Beecher also read the Rush pamphlet, and like the New York physician was roused to a sense of the necessity of active measures against intemperance which had increased to an alarming extent.

To the untiring efforts of Dr. Rush, to the vigorous thought and speech and the definite plans of Dr. Beecher, were largely due the awakening of temperance sentiment that finally came. Many temperance societies, some of which are still in existence, were organized; leading public men gave voice and pen to the new reform. But progress was slow. Moderation alone, not total abstinence, was the basis of the movement, and even this referred only to distilled liquors. The earliest pledge of the Massachusetts Temperance Society prohibited merely the "too free use of ardent spirits." Drunkenness constantly increased. Plainly something more radical was needed. Thoughtful men began to see and believe that "ardent spirits" gave neither strength nor warmth, that moderation in their use but led to immoderation, and that total abstinence was the only hope of success, although as yet, total abstinence referred merely to the use of distilled liquors. But once started in this direction the reform went on with rapid strides. Pledges of total abstinence from distilled liquors were soon followed by the advocacy of total abstinence from all intoxicating beverages, as people came to realize that the same alcohol which in large quantities did its terrible work in distilled liquors lurked in the familiar wines and cider as well.



Benjamin Rush.

A great temperance wave swept over the land. It is said that by 1835 "more than eight thousand temperance societies had been formed, more than four thousand distilleries stopped, over two hundred thousand persons had ceased to use any kind of intoxicating liquors and about two millions had ceased to use distilled liquors."

The Washingtonian Societies directed their attention to the reformation of the drunkard. The children's "Cold Water Army" numbered its thousands pledged to total abstinence.

Thus the relation of the individual to the problem of intemperance came to be defined, and total abstinence to be the basis of temperance reform.

As the years have passed, science with its painstaking research has shown more and more distinctly that alcohol in the cider of the home still, or in the wine of France and California, or in the whiskey of the great distilleries is always the same, a seductive tempter, stealing away all that is noblest in human possibilities. An awakened conscience has led men to realize their responsibilities for others more easily tempted, and to abstain for the sake of the "weaker brother." The practical commonsense of business sees in indulgence in intoxicants a menace to clear thinking and accurate doing, and demands that its interests shall not be thus hampered even by moderate drinking.

The progress toward freedom from the power of alcohol has been slow, at times almost imperceptible, yet it has been definite. Thousands of homes that even a generation ago would have had alcoholic beverages in constant use, to-day are free from their presence in practice and influence. A state of slight intoxication is no longer considered of small consequence. Increasing public intelligence regarding the true nature and effects of alcohol, due to long and bitter experience and to extended popular education upon the subject, sees in alcoholic beverages the greatest possible menace to individual, social or political security and prosperity.

Ever since an early Massachusetts law forbade tavern keepers to sell more than a half pint of wine to one customer and the Plymouth colony in 1636 found Thomas S—"guilty of drunkenness and thought meet he should be whipt," legislation has sought to hedge about and control the drink habit. Probably no one matter has been the object of more lawmaking. Legislation relative to the sale of alcoholic drinks has run the gamut from total noninterference to total prohibition. Efforts have been made to restrict the sale through all degrees of the license system in the hope that the number of drinkers would diminish in proportion to the decrease in number of bars.

The spread of total abstinence sentiment in the first half of the century led to the hope that entire prohibition of the sale of intoxicants would remove temptation and thus prevent the formation of the drink habit. The license system plainly was ineffectual. State after state passed prohibitory laws, and the testimony of the times showed that a marked decrease in

intemperance and all its results followed. Temperance reform seemed on the high tide of success.

As the slavery crisis became increasingly imminent, popular interest was diverted to the settlement of the more pressing evil. The tension of the four years of war and the scarcely less trying period of re-adjustment that followed crowded out any wide-spread consideration of the alcohol question. At the same time the conditions of the question were changing. As in previous wars, many soldiers because of the privations and temptations of military life came home established in the habitual use of intoxicants.

A variety of causes, among them the abolition of slavery and the consequent triumph of free labor, brought thousands of immigrants yearly to the United States. While among them were those who have proved loyal friends to the cause of temperance, the great majority brought with them the drinking customs of their native countries where temperance sentiment had made little headway. The infusion of such masses of population among our people could not fail to weaken somewhat total abstinence sentiment, especially as with the tide of immigration came the growth of the great beer interests. The idea was advanced that beer was not only harmless, but even healthful and would prevent drunkenness. All these facts contributed toward a decided reaction which was greatly promoted by the investigations conducted by a committee of the Massachusetts legislature, in which the idea was advanced, as it has been again of late, that alcohol has a food value and also that "the love of stimulants is one of the strongest of human instincts; that it can not be annihilated but may be regulated." The fallacies of these opinions were exposed, but the high standing of such men as ex-governor John A. Andrews and Dr. Henry I. Bowditch who strongly advocated them, led to their wide acceptance, and many who previously had held to the principles of total abstinence for the individual and prohibition for the state began to doubt, to waver, and finally to retreat from their high moral position to the point of view of moderate drinking and license. Public conscience became dulled and previous temperance measures discredited. Many of the prohibitory laws were repealed and have never been restored to their places upon the statute books.

Some of those who had advanced the theories that thus contributed to this reaction frankly admitted later, after irreparable mischief had been done, that experience had shown them to be in the wrong.

Early temperance legislation can not be said to have been the work of any one political party. It was rather the outcome of an enlightened public conscience brought to bear upon legislators of all political faiths. Since the Civil War, however, a party has been formed for the express purpose of dealing with the alcohol question, founded on the conviction that the manufacture and sale of all intoxicating beverages should be prohibited by law. The Prohibition party believes in prevention rather than reformation; believes that the state has no right by imposing a fee for licenses to become a participant even to that extent in the traffic, and that it is a moral wrong for the state to countenance by restrictive measures an immoral practice; that all "restrictive measures" fail to decrease the drinking habit or the alcohol appetite, but tend to the contrary; and, therefore, that prohibition not only of the sale but of the manufacture of alcoholic liquors is an absolute essential for the prevention of the spread of intemperance.

From the beginning the growth of temperance conviction has been by periods. There has been an ebb and flow, but each incoming tide has brought the cause higher than before. Each period has been the result of a certain education, as the facts about the character and effects of alcohol and their relation to the individual and to society have been recognized one by one, and then gradually have permeated and controlled popular opinion. Hence, when the cause seems at low ebb, there is encouragement to continue the same work of education knowing that by the laws of nature, in due time the tide controlled by the silent, invisible but powerful force of knowledge will turn.

While in a century great progress has been made in public sentiment and practices against the use of alcoholic beverages, the traffic in them has attained a power not dreamed of a hundred years ago. Such a power involving vast moneyed interests will not give up its hold without a struggle. The hardest of the battle is possibly still to be fought. On the one hand are arrayed clear-eyed science, strong-hearted justice, humanity and patriotism; on the other, stands entrenched the love of power and profit swaying influence and action. When or how the end will come no one can tell. Certainly it will not be until a people wise in their knowledge of the character of alcohol, far-seeing in their understanding of the relation of national problems to national life and prosperity, strong in their power to will and to do, rise in their sovereign might and declare that "there shall be no more curse." To this end, education must be the watchword—education as to the nature and effects of alcohol without which there can be no intelligent action, education as to the social and economic loss it entails, and above all, education in that broader art, the unselfish love of all humanity.

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JUNE.

JUNE is the pearl of our New England year,
. . . Long she lies in wait,
Makes many a feint, peeps forth, draws coyly back,
Then, from some southern ambush in the sky,
With one great rush of blossom, storms the world.

LOWELL in "Under the Willows."

THY MISSION.

"There's never a rose in all the world
But makes some green spray sweeter;
There's never a wind in all the sky
But makes some bird wing fleeter;

There's never a star but brings to heaven
Some silver radiance tender,
And never a rosy cloud but helps
To crown the sunset splendor;

No robin but may thrill some heart,
His dawnlight gladness voicing;
God gives us all some small sweet way
To set the world rejoicing."

MIDSUMMER.

"After the Maytime and after the Junetime
Rare with blossoms and perfume sweet,
Cometh the round world's royal noontime,
The red midsummer of blazing heat."

THE HEART OF SUMMER.

The infinite bliss of Nature
I feel in every vein;
The light and the life of summer
Blossom in heart and brain.

BAYARD TAYLOR.

"Life went a-Maying
With Nature, Hope, and Poesy."

THE OPEN SECRET.

"NOW it is June, and the secret is told;
Flashed from the buttercup's glory of gold;
Hummed in the bumble-bee's gladness, and sung
New from each bough where a bird's nest is swung;
Breathed from the clover beds, when the winds pass;
Chirped in small psalms, through the aisles of the grass."

SUNSHINE AND SHADOW.

"Sunshine and shadow,
Now under, now over,
Are kissing the leaves
In their own tender way,
Warmly and softly,
Making them quiver,
All in the light of this glad summer day.
Over and under,
World full of wonder.

Shadow and sunshine,
Sunshine and shade,
The leaves send their quiver
To the heart of the river,
Which answering gives them
Their likeness again."

SUMMER-BRINGER.

Snowdrifts never come again
When thou standest sentinel,
Shouting gaily: "All is well!"
To the blooms on hill and plain.
Summer-bringing columbine,
Make thy happy errand mine!

ROSE TERRY COOKE.

"On long, serene midsummer days,
Of ripening fruit and yellow grain,
How sweetly, by dim woodland ways,
Or tangled hedge or leafy lane,
Fair wild rose thickets, you unfold
Those pale pink stars with heart of gold."

A JUNE DAY.

WITH song of birds and hum of bees.
And odorous breath of swinging flowers,
With fluttering herbs and swaying trees,
Begin the early morning hours.

So fair and fresh the landscape stands,
So vital, so beyond decay,
It looks as though God's shaping hands
Had just been raised and drawn away.

The holy baptism of the rain
Yet lingers like a special grace;
For I can see an aureole plain
About the world's transfigured face.

—GEORGE HENRY BOKER.

SCIENTIFIC TEMPERANCE.

THE paper read by Professor Atwater at the Chicago meeting of the Department of Superintendence was excellent in its general spirit, but dictatorial in its nature. No one could doubt his honesty, but he had too much of the spirit of a specialist who knows it all, and can not be made to admit that there is any other side to the question.

The discussion which followed was such only in name. Certainly it was not worthy the greatest subject which has been on the program of the Department for the last ten years. Professor Atwater put himself in line with the best thought of the day when he emphasized the moral side of the question, but those who followed him impaired the force of what he said by an attack almost personal in its nature upon those who have been for years leaders and pioneers in one of the most far-reaching reforms of modern times.

That the use of intoxicating liquors is an evil of great magnitude few, if any, question. Until very lately it has been a matter of general agreement that it is a wise course so to instruct the children in our schools that they will not fall into habits of using stimulants or narcotics when they come into active life. So far there is practical unanimity among educational men and women. But when we come to the discussion of how this may be best accomplished, there is a radical difference of opinion among those who claim equally to be good friends of temperance. There is a still wider divergence when we attempt to establish foundation principles upon which to build our system of temperance instruction. Moreover, this tendency to diverge is increasing every day until, unfortunately, the friends of temperance instruction are arrayed in two seemingly hostile camps. The difference which separates them is so slight as to seem well-nigh ridiculous. When the question is asked, What is the nature of alcohol? from one party comes the reply, "It is a poison," and from the other the reply, "It is a food." At the same time those who contend that it is a poison do not deny that it is sometimes useful as a medicine, under a physician's advice, and those who say it is a food do not claim that it is a food in the same sense as wheat or rye or meat. The entire question is purely scientific, and the issue is to determine on which side of an imaginary line alcohol shall be placed, or in which category of substances it shall be included, the poisons or the foods. We were told in Chicago by Professor Atwater that we must endeavor to teach the truth always and at all times. Certainly no one will dispute that, but let scientific men tell us what is truth; not hesitatingly, not doubtfully, but with the confidence of men who are willing to stake their reputation as scientists upon their assertion. At present eminent authorities, among them Professor Atwater, tell us it is a food, and other authorities, equally as reliable, tell us it is a poison. I have in my home a bottle filled with a light, almost colorless liquid. I examine the best books at my disposal, and obtain the opinion of men who claim to be experts as to its nature and the effects of its use upon the human body. As the result of my investigations I am left in great doubt upon many points. I am told that in some cases it is poison and in others that it is a food; that a few persons may use it safely, but that in the great majority of cases its use begets an overwhelming appetite for it which can not be controlled. I consult the history of its effects upon mankind, and I find that beyond all dispute it has wrought ruin with individuals and with nations. Now, what is the wise course for me to pursue? Shall I handle the matter with gloves, lest I fail to teach the truth in all its minutiæ? Shall I label the bottle, "Food, to be used with care," or shall I label it "Poison," and teach children under no circumstances to meddle with it? There can be no possible question as to my duty in such a case. But there is held up to us the terrible specter of a young person who has lost faith in everything good, and who has been led to view with distrust all the teachings of his youth because he has been instructed to look upon alcohol as a poison and finds out that it is a food. How about the young man who is taught that alcohol is a food, that its temperate use is sometimes beneficial, and who when too late discovers that in his case it has proved a poison? Professor Atwater was confronted with this question at the Chicago meeting, and failed to answer it to the satisfaction of many in the audience.

Very few teachers are capable of performing scientific experiments in order to determine the nature and character of alcohol and its effects upon the human system. Consequently we are forced to accept the conclusions of others, and to give them such weight as they seem to deserve. It is so with a large part of knowledge. Many of the theories put forth in the books today to account for physical phenomena are

entirely different from those advanced fifty years ago, and yet we have not been made infidels by the discovery that we were erroneously taught. Electrical science has been completely revolutionized since Ben Franklin's day, yet no one disputes the fact that lightning kills. The experiments made by Professor Atwater may be new and ingenious, but others before him have made the same statements which he makes. There is nothing in his conclusions to startle the scientific world, or to carry dismay into the ranks of those who desire so to instruct the children as to save them to a life of sobriety and temperance. Turn on the searchlight; keep nothing back. We contend that we must and will have liberty to reveal all sides of the picture. The children in our schools must not be told that alcohol is sometimes a food and sometimes a poison; that it is beneficial to some and injurious to others; that too much is dangerous, but that a little may be used with safety, and left there in the darkness until the whole truth is revealed to them by the light of experience. Such a course would be a crime against childhood, as well as against God. The secret of this whole contention is not whether alcohol is a food or a poison, but that in our attempts to indoctrinate the children with the idea that the only course of safety is that of total abstinence we are cutting across the grain of a phase of modern society which regards the use of intoxicants as a lesser and not a greater evil.

We are willing that text-books should be revised in the light of modern science just as often as necessity requires. But we insist upon the whole truth, and that modern science shall not be used as a cloak with which to cover up or even to mitigate facts as the experience of the past reveals them. I do not hesitate to assert that where one person is injured by the prevalent notion concerning alcohol as set forth in the text-books now in use in the schools, thousands have been ruined in body and intellect and soul because they were not taught in their youth that alcohol weakens the nerves, breaks down tissue, and unfits the brain for vigorous work. It is nonsense to say that over-eating is as bad as over-drinking; that the table has slain as many as the wine-glass. No man in his sober senses will say that gluttony has produced the crime, the death, the sorrow, the poverty, the wretchedness extending to whole families of innocent persons which the use of alcoholic liquors has caused. Such pettifogging is more than pitiable; it is pathetic.

When we speak of temperance, we are understood to refer to abstinence from intoxicating drinks unless the word is limited in some way by the sentence in which it is used. Children so understand it, and so do adults. In dealing with children we use words in the ordinary and not the technical sense. When we attempt to tell the child that alcohol is a food, he accepts the conclusion that it is a food in the same sense as anything is which is served out to him from his father's table. We may explain and qualify as we choose, but we can not do away with the impression which the word "food" has made upon his mind. He jumps to the conclusion that alcohol is by nature always a food and is seldom a poison. By his own process of reasoning, he concludes that an excessive use of alcohol is no worse than an excess in food of any kind, and he finds his mistake only when too late to correct it. This is the inevitable result of the plan of temperance instruction which is commended to us as an improvement upon the one now in use. Is it not wise for us to stop and carefully consider whither we are drifting? Are we warranted in discarding the experience and the

"Morn,
Wak'd by the circling hours, with rosy hand,
Unbars the gates of light."

teachings of the past on any evidence now set before us? The frying pan may be hot and uncomfortable, but that does not justify us in jumping recklessly into the fire.

I have enough evidence gathered from the most eminent scientific authorities to convince me that the question is a long way from being settled as far as the nature of alcohol is concerned. The investigations of the next ten years are just as liable to show that it is a poison as that it is a food. But whether food or poison we know from experience that its nature is not changed by time, and that its effects are the same as they were generations ago.

If the text-books are wrong, let them be revised. If they have been "recklessly and carelessly thrown together," let some person who is endowed with superior wisdom make better ones. It can hardly be believed that our great publishing houses have put thousands of dollars into books so full of scientific error as the physiologies of to-day are alleged to be by these new "apostles of alcoholic food." But we may discard all text-books and not touch the vital point of the question at issue. It is not a question of text-books at all. Nor is it a question of how the law shall be worded. The issue is so broad that it covers the entire nation. It threatens to undo the work of nearly a quarter of a century, and to throw into chaos the cause in every state which has upon its statute books a law requiring "Scientific Temperance Instruction" to be given to the children in our public schools. It is as well to pick up the glove now as at any time. We have reason to fear that the present tendency is to discredit all that has been done in the way of temperance instruction in the past, and to inculcate openly the most pernicious doctrine that alcoholic stimulants may be used with safety if only moderation be exercised. It is only necessary to inculcate reasonable self-control. Self-control is all right, but it must reach the foundation, so that whether alcohol is a food or a poison the children refrain from touching, tasting, or handling the accursed thing.

A recent editorial in the *Outlook* doubts the expediency of teaching the effects of stimulants and narcotics except in the higher grades. That is the natural trend of the opposition to what is generally styled temperance teaching. The average school life of the child in the public schools is about four years of seven months each. Not over twenty per cent. of the pupils in our cities finish the eighth grade. It is a wicked proposition that these young people whose circumstances force them to take up the battle for daily bread at ages from ten to fifteen are to be deprived of all knowledge of the effects of alcoholic drink upon the human system. "Whatever you would have appear in the life of a nation must be instilled into the minds of the children when at school." There is no more reason for putting off true temperance instruction until the child reaches the upper grades than there is for putting off all moral instruction. Hear the children: —

> "Make us strong in time of trial;
> Teach us temperance, self-denial,
> Patience, kindness, fortitude."

The moral side of temperance instruction, so grandly urged in certain quarters, is all right, but how am I to instruct the child against any bad habit whatever unless I show him plainly the evils which follow in the train of indulging that habit? Shall I wait until he has become a moderate drinker, and then caution him to exercise self-control and not to allow his appetite to get the mastery of him? Children are governed by motives as are persons of mature age. If we expect the man to exercise his will-power to resist temptation there must be some motive or reason as a foundation, and the earlier in childhood this reason or motive is implanted, the broader and stronger is the foundation upon which his will rests and from which it derives its strength.

The whole system of Scientific Temperance Instruction is so fitly joined together that if it is faulty in one particular it is faulty in all. Men use tobacco and live to be ninety years old. Men and women are addicted to the morphine habit and yet live for years. Shall we tell the children that the use of these drugs or poisons or foods is injurious to one and not to another? Shall we inculcate the notion that if used at all it must be with great moderation; that the appetite must be subject always to the will? And yet the morphine habit is no more insidious in its approaches, no more sure of its victim than is the use of alcohol as a beverage.

The friends of Scientific Temperance Instruction have no reason to be dismayed. There is no occasion for yielding an inch of the ground already won. Teach the children the whole truth, not only as we learn it from science, but as we learn it from experience as well. At this present juncture, when our railroads, our great manufacturing interests, our business men, are taking the ground that their most trusted employees must in all cases be "total abstainers," it seems to be a most unfortunate time for our schools to teach that intoxicants can be used with safety if used moderately. Moderate drinking in itself may not be a crime, but to teach the child that moderate drinking may be indulged in with safety, is a crime against the American home, against American interests, and against American manhood.—Hon. Henry Sabin, in Education.

Primary.

REVIEW LESSONS.

THE CHILD'S STANDPOINT.

THESE are days when the child's lessons are "written in clouds and trees," and he would fain con their pages instead of bending over the printed book. Happy is that school in which the teacher is wise to interpret this spirit of eager restlessness, and able to guide without thwarting it. Many a compromise will be necessary, while above all she too must feel the "growing pains" of the season, and be quick to adapt work and method to the changing moods of her pupils.

In many schools an occasional class exercise may be held outdoors during the first warm days. Where this is impracticable, bring the spring atmosphere and its dainty wild flowers into the schoolroom.

Let the closing lessons in physiology be based on some bird or squirrel which the children have seen on their way to school and want to talk about. Help them to find what these shy creatures eat and drink; how they are dressed; when they go to bed and get up; what they can do with their tiny beaks and wings and paws; how we differ from them; and why boys and girls are better off than the most fascinating bird or animal.

Read aloud Longfellow's description of the wild pets of Hiawatha, and study each in the same way. Many fascinating bits from Thoreau and Burroughs or Ernest Seton-Thompson may be used for this purpose also, remembering that the main thing is to present the topics which must be reviewed from the child's own standpoint, and just now this is outdoor life and its activities. The questions and quotations which follow are based on the lessons for primary grades which have been given in the JOURNAL during the year, and it is hoped they will be found suggestive for other topics as well.

FIRST YEAR.

How does the skin which covers our bodies differ from the clothing we wear? How is it different from that of the horse? the sheep? the bird?

Why does the skin need to be kept clean?

How can we help our hair to grow long and thick and glossy?

How do cigarettes spoil the teeth?

What different forms of water have you seen? What uses has each? Why do we need water?

Why is water a better drink than beer?

What can we do with our hands? How can we make them useful to others? What does the robin have instead of hands? the squirrel? a fish?

What kind of hands shall we need when we are men and women? How can we train them now?

AUTHORITATIVE QUOTATIONS.

The use of beer is found to produce a species of degeneration of all the organs?
—[Medical Pioneer.

Beer does uot give strength. The use of it can lead to no good result; it may be the cause of infinite harm.—W. E. BALDWIN, M. D.

Alcohol distorts, depraves, degenerates the organism.—C. H. HUGHES, M. D.

The stress and strain of modern life can only be safely encountered by those who effectually cultivate self-control, and there is no greater enemy to self-control than indulgence in strong drink, even in quantities deemed moderate.—[British Temperance Record.

Alcohol is absolutely injurious to the growing body. It will stop or arrest the nutrition of the young. The gin-fed baby in all its shriveled weakness is a testimony to the injury that alcohol inflicts in the early stages of life.
—ANDREW WILSON, M. D.

The action of alcohol on food is the reverse of that of water, and the tendency therefore is to harden the food and render it less susceptible to the action of pepsin. Alcohol is not a substance that promotes the digestion of food.
W. N. EDWARDS, M. D., F. C. S.

Nicotine is much more readily absorbed when in solution with the saliva, and enters the system in greater quantities. In a smoker the effects are produced by the mere contact of the tobacco smoke with the mucous membrane by inhalation, which is partial when the smoke is drawn only into the mouth, and complete when drawn into the lungs, excepting in the case of the cigar-smoker where some of the tobacco is in solution from the contact of the cigar with the tongue and saliva. Nicotine is one of the most violent poisons known to chemistry.—G. W. CROOK, M.D.

While many smokers reach old age, many fail to live to old age because they are smokers. The skin is the subject of itching and reddening, and disturbance of bowel function is common.—E. S. TALBOT, M.D.

SECOND YEAR.

In what ways do cigarettes hurt the health? How do they unfit boys for school or work? How do they make people selfish?

How much can we learn about an orange by touching it? by the sense of smell? What animals can see farther than we? hear better?

What does each of our senses tell us about an object?

What games help our senses to do finer and better work? In what other ways can we train each sense?

In how many ways do alcoholic drinks hinder us from doing our best?

What kinds of foods are best for growing children? How should our food in summer differ from what we eat in winter? What does food do for us? What is the food of the cow? the cat? the fly?

What can we do to help our bodies grow tall and strong?

AUTHORITATIVE QUOTATIONS.

The use of cigarettes affects the nervous system, weakens the will power, and destroys the ability of the boy to resist temptation. Because of this he easily falls a victim to those habits which not only destroy the body, mind, and soul, but irresistibly lead him into a violation of the laws of his state.—Hon. George Torrance, Supt. Illinois Reformatory.

It is impossible to take habitually any appreciable quantity of alcohol without injurious effects which show themselves sooner or later. Small doses affect the sight, the hearing and other senses, and they produce progressive paralysis of the nervous system, beginning with the judgment and the voluntary control.

—W. N. Edwards, M. D., F. C. S.

Degeneration of the muscles, heart, brain, nerves, kidneys, and in fact all the organs of the body is induced by the habitual use of alcohol—J. H. Kellogg, M. D.

I find the use of malt liquors to be the cause of nine-tenths of the crime, misery, poverty and wretchedness in our city.

—J. W. Hall, M. D.

The food value of strong drinks is absolutely insignificant. There is no tissue in the body which alcohol itself is adapted to nourish. It does not even appear to act as a fuel or source of heat and energy, apart from nutrition, for it depresses animal heat, and diminishes the excretion of carbonic acid. Its claim to give strength is wholly delusive. It is the drink that is strong and not the drinker.

—T. Morton, M. D.

The very weakest wines are unsafe, since none of them contain less than from three to five per cent. of alcohol. Even small beer would be capable of doing mischief.

—J. H. Kellogg, M. D.

No feat can be performed on the supposed strength of spirits. Muscular power and endurance are always seriously diminished by the use of alcohol, while the delusion is always present of greater ability than ever.

—C. H. Shepard, M. D.

THIRD YEAR.

Why do we need pure air to breathe at all times? How can we keep the air pure in our sleeping-rooms? How do growing plants help to make the outside air pure?

Why does all food need to be chewed thoroughly before being swallowed? What harm may be done our bodies by eating between meals? Why are not tea and coffee suitable drinks for young people?

How is it dangerous to sit in damp clothing or wet shoes?

Why do our bodies need both fat and muscle? Where is muscle needed? fat? How does alcohol hurt muscle?

How does beer hurt our bodies? Why is it unsafe to drink even one glass of liquor which has alcohol in it?

How do alcoholic drinks hurt the power to think?

What harm is there in sitting or walking bent over? How does the use of tobacco affect the growth of children?

AUTHORITATIVE QUOTATIONS.

As a drop of water is of the nature of the sea, so in its degree is the effect of alcohol, opium, tobacco, cocaine, kola, tea, or coffee, of the nature of mania. They give a feeling of pleasure or rest, when rest or pleasure does not exist. This feeling arises from injury to the nerves which the brain does not truthfully interpret.—David Starr Jordan.

Alcohol hinders the nutrition and growth of the delicate muscles which direct the voluntary movements of the hands, the arms, the head, face and other parts, and they finally cease to respond readily to the commands of the will.

—W. E. Baldwin, M. D.

Thousands of beer and wine drinkers by the daily use of these beverages have lost their muscular activity and endurance to such an extent that an active exercise of twenty minutes would make them puff like a heavy horse.

—N. S. Davis, M. D., LL.D.

A degenerate fat condition is especially true of consumers of large quantities of beer or wine.—W. F. Wilkins, M. D.

Even a small quantity of alcohol may just

turn the balance between sanity and insanity, responsibility and irresponsibility, and may be the direct exciting agent of crime, immorality, suicide, and even homicide.

—F. W. Mott, M. D.

No amount of alcohol, however given, can increase the amount of work done in that same period without giving rise to very serious disturbances in other parts of the body; indeed, the amount of work done is never really increased.—G. Sims Woodhead, M. D.

Alcohol impairs rapidity of thought and promptness of mental reaction, or responses to impressions. The action of alcohol is that of a paralysant.—C. H. Shepard, M.D.

Tobacco is a depressant. It first stimulates and then paralyzes the nerves. It depresses the heart, and reduces the temperature of the body. Used by the young it hinders the development of the higher nerve centers, and impairs nutrition by interfering with the processes of digestion and assimilation.— [Materia Medica, by Dr. Potter.

Hallucination of vision, anxiety, loss of memory, general mental depression and lack of control of the will always follow the use of tobacco on the part of the young.—Professor Krohn.

"Here's to the boy with the freckles,
The boy with the freckles and tan!
These glorious imprints of heaven,
Have labeled him God's little man."

ALCOHOL THE DESTROYER.

THE friends of the distiller have tried to prove that alcohol is a food and a tonic, but the effort has resulted in utter failure. Alcohol is neither a food nor a tonic, but the most pernicious of poisons. Taken habitually in even the smallest quantities and weakest beverages, alcohol undermines and destroys the constitution. Its action is progressively and continuously hurtful and destructive. There is no such thing as temperance in the use of alcoholic liquors. Whether it be whisky or beer or wine, and the daily consumption large or small, the effect is the same. The sole difference is in the time required to burn out the constitution. The sapping of the vital forces is going on all the time.

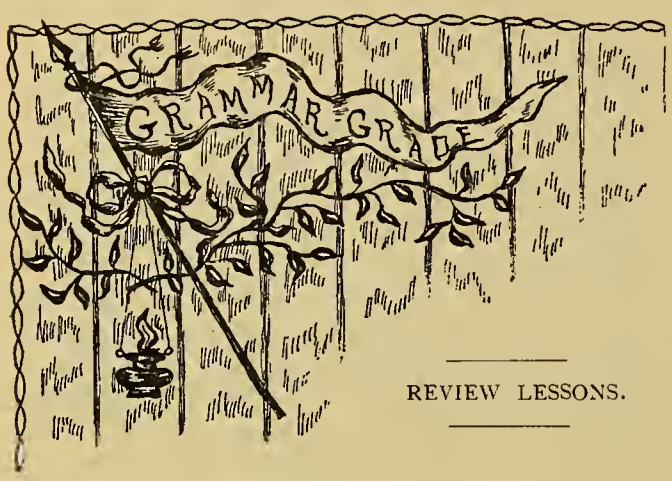
Alcohol does not take the place of food; it merely benumbs appetite. Intense hunger is one of the earliest symptoms in men under treatment for alcoholism, after the poison is eliminated.

Alcohol dwarfs a man mentally, morally and physically. It is the great cause of racial degeneracy. It is responsible for many crimes, vices and diseases. The drink habit is no more justifiable than suicide. The temporary oblivion of the cup must be paid for, when the bout is over, by bodily suffering, increased unfitness to discharge individual responsibilities, a haunting sense of unworthiness and failure, the unhappiness of all those dependent upon the drunkard, the disapproval of society, and the gradual loss of all that makes life worth living.

This is a sad but true picture. It is more than sad to reflect that the medical profession has had a hand in painting it. The doctor has countenanced the widespread and indiscriminate use of alcohol. He has prescribed it for this, that and the other trivial complaint, and looked on complacently while the youth of the country inflamed its passions, clouded its judgment, and confused its moral sense, forging the fetters of imperious habit to drag down and chain the forces of manhood.

The physician is the last man to harm any one intentionally, but he can not disclaim moral responsibility on this account. Ignorance is no excuse before the law. The attitude of the doctor is responsible for the general, deeply rooted belief that alcohol is a harmless stimulant, a tonic, and a substitute for food; therefore, it must be the task of the doctor to show that such a belief is erroneous, the result of superficial observation and insufficient knowledge; that time, experience and a more comprehensive study of the action of alcohol show conclusively that alcohol is a most deadly poison.

Prohibition will never stop the use of alcohol. Law can not force a man to quit drinking. He drinks because he believes that alcohol is harmless, if not positively beneficial. That belief must be changed. Men must be taught that alcohol is a deadly and destructive poison, and that by the doctor, to whom all naturally look for knowledge and guidance in matters of health. [Editorial in St. Louis Medical Brief.



REVIEW LESSONS.

GROWTH, NOT FACTS.

"I seem to halt, but yet I know
The breath of God is in the sails."

WITH the coming of vacation we are wont to underestimate the work of the year, to think that perhaps after all our best efforts have been in vain and that few of the truths we have tried to inculcate will be remembered when September has come.

Let us not slacken our endeavor because such thoughts obtrude. As well might the oak say to itself in autumn, "Alas, for the sun and dew which have visited me! They have come and gone, and I am as I was before." No, not the same. The particles of moisture and nourishment have disappeared because their work was done, but under their influence the tree has grown larger and stronger.

Growth is the thing aimed at in trees and character alike. The child will forget many facts in physiology as in other studies. He is not meant for an encyclopedia. But if we have striven with all the intensity of a great purpose to show him how to live honestly and uprightly, and why he must keep mind and body free from the slightest taint of narcotics, we may be sure that he, too, has grown and that the lessons we have tried to teach have accomplished their purpose.

Let us look at the work of the year from this viewpoint, emphasizing not the number of bones in the skeleton, or the shape of the different muscles, but how each part of the body rightly taken care of helps to make the person strong and pure and lovely, ready to do his own work in the world. Suggestive questions on the effects of narcotics upon body and mind, and statements from physicians and scientists bearing upon these points are included in this article.

FOURTH YEAR.

How are boys who have begun the use of tobacco at an early age generally inferior to those who have always let it alone?

What parts of the body are injured by tobacco?

How does the use of tobacco usually affect size? growth? strength? the power to think? to act?

Why is tobacco injurious?

How do alcoholic drinks hurt the brain? the nervous system?

What organs of the body are damaged by alcohol? How is the work of each hindered.

What work of the blood is poorly done when alcohol has been taken into the system? How is it possible for the alcohol one takes into his stomach in liquor to harm nearly every organ of the body?

What are the first effects of a glass of liquor on a person unused to drinking?

If alcohol makes one feel warmer, why is it not a good drink for winter or when one feels chilly?

Why do the best business men want only total abstainers in their employ?

In what ways has the boy who never uses narcotics the advantage over those who smoke and drink?

AUTHORITATIVE QUOTATIONS.

Pure tobacco is a powerful sedative poison. To chew it irritates the mucous membrane of the mouth; injected into the cellular tissue it produces pain; used in quantity it gives rise to confusion of the head, vertigo, stupor, faintness, vomiting, and general depression of the nervous and circulatory functions. It often produces feebleness of pulse, coolness of skin, fainting, convulsions, and sometimes death.
—[United States Dispensatory.

The brain and nervous system of persons who have used spirits is changed, shrunken and disorganized. Also other organs, such as the liver, kidneys and heart, are so seriously damaged in structure as to perform their work very imperfectly.—C. H. SHEPARD, M. D.

Alcohol has a special action, apparently, on the blood globules and hinders them in their work of nutrition.—ANDREW WILSON, M. D.

Alcohol from the stomach quickly reaches the blood, and by it is brought into direct and pernicious contact with the living tissues of the body.—[American Medical Quarterly.

The primary effects of a moderate dose of diluted alcohol, as a glass of whiskey and water, on one unaccustomed to it, are to cause temporary congestion of the stomach, dilation of the blood-vessels of the skin indicated by the flushed face, a more rapid beat of the heart, and nervous excitement exhibited by restlessness and talkativeness.—H. NEWELL MARTIN, M.D., F.R.S.

Whilst alcohol may be oxidized and thus converted into heat, it does so much damage in other directions, one of which is the rapid escape of heat from the surface of the body, that it can not be said to fulfil the function of a food. It is a destroyer, not a builder.

—W. N. Edwards, M.D., F.C.S.

Alcohol acts injuriously on the judgment and power of self-control, and never improves the person who takes it. Men are injured without knowing it, and by slow degrees so poisoned that their health is enfeebled and their life is, on the average, cut short.—J. J. Ridge, M D.

Alcoholism consumes the race at both ends, by increasing the mortality and diminishing the births, or by producing degenerated offspring.

—Professor Debove.

FIFTH AND SIXTH YEARS.

Why is cider made from apples a dangerous drink, while lemonade made from lemons is harmless?

Why is not beer made from grains as much food as bread made from the same?

What reasons are there why alcohol is not a food and can not be used as such?

How is alcohol a deceiver?

Why is the most moderate drinking dangerous?

Why is it poor economy to drink alcoholic liquors to warm one?

If alcohol produces heat in the body, why is the drinking man the first to suffer from the cold?

How does alcohol injure the skin of the drinker? Why is the skin of such an one often blotched and swollen?

How is the important work of excretion hindered by the use of alcoholics? What harm is thus done the health?

Why is the nervous system the greatest sufferer from the effects of alcohol?

"A bonny heather bell."

AUTHORITATIVE QUOTATIONS.

Alcohol is a poison. It is not assimilated. As it is not assimilated it can not be a food. It does not stimulate or strengthen, but depresses and weakens. It disturbs physiological processes and lays the foundation for disease. —[Journal American Medical Association.

So far from being an innocent and healthful article of diet, beer and all that class of liquors are poisonous and unwholesome, with no practical food value.

—Norman Kerr, M.D., F.L.S.

Alcohol gives a feeling of warmth or vigor, or exhilaration, when the real warmth or vigor or exhilaration does not exist. It was once supposed that intemperance was like gluttony; the excessive use of that which was good. It was not then known that all nerve exciters contained a specific poison, and that in this poison such apparent pleasure as they seemed to give must lie.—David Starr Jordan.

Alcohol lowers temperature. Owing to the dilation of the blood-vessels under its influence there is a greater radiation of heat from the body than is produced by the oxidization of the alcohol. It is like a man trying to get an increase of income by spending more than he gains.—W. N. Edwards, M.D., F.C.S.

Alcohol paralyzes the vaso-constrictor nerves, producing turgescence of the skin, with an accompanying feeling of warmth. The higher alcohols are more and more poisonous as the series ascends.

Graham Lusk, M.D.

A clear skin and a healthy complexion are seldom seen in persons who indulge in the drinking of beer, ale, wine, or other beverages of this kind. The skin of the face, and especially of the nose and cheeks, is particularly affected and assumes a purplish or violet hue which plainly tells the story of indulgence in alcoholic drinks. The face of even the moderate drinker is often marked in this way.

W. E. Baldwin, M.D.

Tobacco weakens the memory, enfeebles the action of the heart, leads to intemperance, arrests development, causes insanity, deafness, and cancer of the lip, and makes men content with conditions needing correction and reform.

—Matthew Woods, M.D.

SHALL ALCOHOL BE RECOGNIZED AS A FOOD?

THE experiments of Prof. W. O. Atwater, of Wesleyan University, Conn., and the discussions growing out of them have opened up afresh the old questions: "What is food?" and "Is Alcohol Food?" The experiments in question consisted in observations on the metabolism of a man who was confined in a respiration-calorimeter during successive periods. The calorimeter used by Professor Atwater is one of the most complete in existence, and the technique of his experiments is elaborate and as free from error as it is possible by present facilities to make such extensive analyses. The observations include not only a quantitative analysis of the various foods and beverages consumed by the man during the period of confinement, and the various excreta, but also a careful estimate of the energy represented by ingested material as well as the energy liberated from the body in the various excreta, in heat, and in mechanical energy.

Through the means of the respiration-calorimeter an experimenter is able to verify the law of the conservation of energy as applied to the animal organism. Professor Atwater has brought new and conclusive evidence to prove that every unit of energy which enters the body as potential energy of the food will leave the body in potential energy as excreta, in heat radiated from the body, or in mechanical work done by the muscular system. The material income of the body must balance the material out-go, and the energy income of the body, in accordance with the law of conservation of energy, must balance the energy out-go, however many transformations it may undergo within the body.

Professor Atwater substituted for a portion of the non-nitrogenous foods a quantity of ethyl alcohol equivalent in energy to the food which it replaced—two and one-half ounces of absolute alcohol per day in six doses. In harmony with what has been known for many years, he found that the alcohol is nearly all oxidized within the body. A necessary result of its oxidization is a liberation of its energy, which is added to the total energy of the body. In these respects alcohol is similar to foods because all foods are oxidized within the body, giving up their energy to it.

The question at issue is whether its oxidization in the body entitles alcohol to a position among the foods. If all substances which are oxidized in the body and give up their energy are to be classified as foods we shall be obliged to list with the latter many substances which are more or less noxious in their influence on the system. The fallacy of the reasoning which would place alcohol among the foods is very apparent when we put it in the form of a syllogism: All foods are oxidized in the body; alcohol is oxidized in the body; therefore, alcohol is a food. As logically might we say: All birds are bilaterally symmetrical; the earthworm is bilaterally symmetrical; therefore, the earthworm is a bird. Oxidization within the body is only one of several important properties of a food; as bilateral symmetry is only one of several important characteristics of a bird.

If we possessed a generally accepted definition of a food, it could be very quickly decided whether or not alcohol conforms to the several conditions which foods must fulfil. There are almost as many definitions of food in our language as there are writers on nutrition. No definition yet proposed is generally acceptable. The difficulty which physiologists experience in formulating a definition of foods is similar to that which biologists have experienced in formulating a definition of life. The advance which physiologists, biologists, pathologists and neurologists have made in the study of the inner life of the cell—that ultimate structural unit, and life-unit—ought to give us in our attempt to define a food advantages incomparably greater than those which Liebig enjoyed half a century ago.

The alcohol-a-food fallacy emanated, along with other notable fallacies, from the chemist, Liebig. From his rather restricted point of view he propagated three doctrines which have been very difficult to dislodge. These were: first, that the nitrogen of the urine is a measure of muscular work; second, that meat extract—Liebig's Fleisch Extrakt—contains nourishment for the living tissues of the body; third, that alcohol is oxidized in the body and must therefore be a food. Fick and Wislicenus proved the error of the first doctrine, Voit and others the untruth of the second, while numerous physiologists, notably Fick and Bunge, and many members of the medical profession have exposed the fallacy of the third. But like Banquo's ghost, "it will not down." Great commercial and social interests are involved in this particular fallacy, therefore the tenacity with which it clings to existence.

A definition of food must include a statement of its general effect on the inner life of the individual cell. In this regard alcohol stands far removed from all recognized foods. Advocates of the alcohol-a-food dogma try to evade the main issue by contending that "as alcohol is oxidized in the body it is to a certain extent a food," or that it possesses "a limited food-value." This method of reasoning is just as fallacious as it would be to contend that because an earthworm possesses one of the requisite characteristics of a bird it is therefore to a certain extent a bird.—[Journal of American Medical Association.

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"All green and fair the summer lies,
Just budded from the bud of spring,
With tender blue of wistful skies,
And winds which softly sing."

WILLIAM E. SHELDON.

ANOTHER member of the Advisory Board has finished his earthly work and passed through the door that opens only outward. A member of the educational group of the Board since its formation, he was wise in counsel, loyal to the great truths for which this department stands. Referring to the opposition to total abstinence teaching which now fills the air in some circles, his last message to us was: "There is but one thing for us to do and that is to stand firmly without the slightest wavering for the truth—refusing with kindness but firmness to change a word of the warning instruction in our indorsed text-books which truth warrants and the nature of the case demands."

To-day this seems almost like a voice from the eternal world, for it was his last message, and only a few days later while sitting at his office desk he laid down his pen, and without a struggle passed into the eternal world where from him who said, "I am the truth," we can believe that he heard the "Well done."

In his going the temperance education movement has met with a loss. The progress of the cause has been marked by successive struggles. Each when reduced to the last analysis, like the one we are now passing through, has been a contest for truth for the children of the land. In 1887, a cruel and unjust attack was made upon the department and its national superintendent, in Minnesota, in an attempted self-defense for recommending text-books on physiology against which the temperance people of the state had petitioned and earnestly protested. Mr. Sheldon was at that time president of the National Educational Association and we have always remembered with gratitude his defense of the cause and its advocates in that emergency. He was a man of convictions and had the courage of his convictions, and for what he has done for this cause the country is his debtor.

THE MEDICAL JOURNALS DO NOT SUPPORT PROFESSOR ATWATER.

PROFESSOR Atwater's alcoholic experiments reported last June have turned the thought of medical circles to the scientific side of the alcohol question as never before. Since January 1, 1900, these experiments and conclusions have been widely discussed by the standard medical journals of the country.

The Journal of the American Medical Association, the organ of the national society of the allopathic physicians of this country, contains an exhaustive discussion by Professors Woodbury and Egbert, of the Medico Chirurgical College of Philadelphia, on the Atwater experiments which shows that judged by their own figures they do not prove that alcohol acted as a food in the case of the man experimented upon; in short, there is nothing whatever in these experiments to show the testimony of scientists wrong who declare alcohol to be a poison and not a food.

Winfield S. Hall, Professor of Physiology in Northwestern University Medical School, shows the fallacy of calling a substance "to a limited extent a food," or sometimes a food on the ground that it has one characteristic of a food, by the following syllogism: "Foods are oxidized in the body; alcohol is oxidized in the body; therefore alcohol is a food. We might as well say: Horses breathe oxygen; the yeast plant breathes oxygen; therefore the yeast plant is a horse."

Articles and editorials in the New York Medical Record, St. Louis Medical Brief, the Bulletin of the Northwestern University Medical School, the Therapist, the Practical Druggist, and others are in line with the Boston Medical and Surgical Journal which says:

"To demonstrate this fact it must be proved that the sum total of the effects of the ingested alcohol is useful rather than harmful in the maintenance of the animal economy. And this Dr. Atwater has not proved. And it has not yet, so far as we know, been demonstrated by experiments. In fact, the weight of experimental evidence is decidedly against it."

The Practical Druggist says: "Every standard work on toxicology and medical jurisprudence classifies alcohol with other poisons; and if alcohol is not a poison because it is possible to use it in ways and doses to which poisonous or fatal consequences can not be directly attributed, then we should be compelled to admit there is no such thing as a poison on earth, for whatever may be true of alcohol in this respect may prove to be true of every poisonous drug known."

According to these and similar opinions expressed by standard medical journals Professor Atwater has not made out his case.

Advanced.

REVIEW LESSONS.

INCENTIVES TO NOBLE LIVING.

AN Italian poet tells of a wonderful tree loaded with bunches of tempting fruits, but when one shook the branches to gather them he pulled down stones upon his head which crushed him with their weight.

As enticing and yet as seemingly harmless is one's first glass of intoxicating liquor. The young man who faces this temptation too often sees nothing but its sparkle and glitter until, too late, he is overcome by the irresistible force of habit which this one glass has helped to form.

Fortunately, while the deadly upas tree of drink is every day striking its roots deeper into the soil of our national life, and even gaining a foothold in our foreign possessions, the incentives to a life of total abstinence have never been so powerful as now. It is becoming impossible for the moderate drinker to get on in the world. Nobody wants to employ him or to do business with him. He is neither so strong, nor so clear-headed, nor so trustworthy as the man who never touches liquor. For the sake, then, of their own success in business, the coming man and woman will be obliged to let narcotics alone.

Another most potent reason for total abstinence lies in our better knowledge of the effects of alcoholic beverages upon the individual himself. Every attempt to prove them helpful or even harmless to a person in health has signally failed. They are branded as poisons by scientists of the greatest repute, and by the unqualified experience of the world. Throughout the Union, save in Georgia and Utah, every child of school age has had this year a chance to learn the facts and to know something of the poisonous effects of alcohol upon the organs of the body.

Now that the time for reviews has come, assign topics to advanced pupils which will best connect the work of the year, and emphasize the fact that each organ of the body has not simply its own work to do, but contributes in some degree to the strength or weakness of the whole human system. The cell may be taken as the basis for such a review. In such a case the class may be asked to consider:

What parts of the body are made up of cells.

How the different tissues of the body differ from one another. The function of each.

What is necessary to the healthy life and growth of the various kinds of cells of which the body is made.

How these cells are dwarfed and injured by the use of tobacco or alcoholics.

How such injuries react upon the health and ability of the individual.

The quotations which follow call attention to some of the injuries which intoxicants inflict upon the body, and the consequent danger of the slightest indulgence in their use.

AUTHORITATIVE QUOTATIONS.

Every organ of the body is made up of tissue, and this in turn is built up of cells, each kind of tissue having its own particular cells, the structure and function of which are different from those of any other cells. Alcohol, consisting of only carbon, hydrogen, and oxygen, can not supply the mineral matter necessary for bone tissue, nor the phosphates necessary to the nourishment of brain and nerve tissue. Furthermore, it can not furnish in the slightest degree the nitrogen needed by all the tissues and most of the fluids of the body for their growth, development, and the repair of waste. — W. N. EDWARDS, M.D., F.C.S.

The cellular tissues of the system are destroyed by the minutest amounts of alcohol taken. The foremost writers on physiology of the world tell us that its use is a positive injury. — A. MONAE LESSER, M.D.

In addition to its effects in producing criminals, idiots, and insane, alcohol arrests the growth. Children of alcoholic parents, trained to the early use of liquor, are stunted in their growth; and a French physician is inclined to ascribe to this fact the decrease in the standard of normal height shown by statistics in that country. — [Bulletin de L'Academie de Med.

Fat often increases abnormally when alcohol is used, and insinuates itself into the tissues of various organs, setting up fatty degeneration, greatly to the injury of the body. Hence we may find fatty degeneration of the heart, of the kidneys, or of the liver, as a result of the use of alcohol. — W. N. EDWARDS, M.D., F.C.S.

A moderate dose of beer or wine would in most cases at once diminish the maximum weight which a healthy person could lift. — WILLIAM BRINTON, M.D., F.R.S.

Alcohol, even in small quantities, always produces more or less irritation of the gastric

mucous membrane of the stomach, and thus hinders digestion. — I. N. QUIMBY, M.D.

Instead of aiding digestion, as was formerly supposed, it has been shown by many careful observers that alcohol in very small amounts actually retards the digestion, especially of proteids. Hence the amount of nutrient material to be taken up by the blood is reduced, and the blood, as we have already seen, is impaired by the presence of alcohol circulating in it; thereby the upbuilding and renovation of the tissues and cells are interfered with, and retrograde toxins retained to impair their vitality further.— A. D. MCCONACHIE, M.D.

Dr. Bollinger, director of the Anatomico-pathological Institute, in Munich, asserts that it is very rare to find a normal heart and normal kidneys in an adult resident of that city. The reason for the kidney disease is the tax put upon these organs by the drinking of excessive amounts of beer. — [Journal American Medical Association.

Fatty degeneration of the kidneys, similar to that which affects the heart and the liver, is to be ascribed to the direct action of alcohol. Catarrh of the bladder, arising from the use of beer, or other malt liquors, is not uncommon. — W. E. BALDWIN, M.D.

Alcohol in the body acts as a paralyzant on certain portions of the brain, destroying the more delicate degrees of attention, judgment, and reflective thought, diminishing the sense of weariness and raising the self-esteem.—GRAHAM LUSK, M.D.

Alcohol makes all the nervous processes slower, although they seem to the person himself to be quicker than usual. — LAUDER BRUNTON, M.D.

Alcohol intensifies man's sensual propensities and perverts his better instincts. Imperceptibly and slowly poisoning and paralyzing the brain, it blunts and destroys its highest functions, the moral sentiment, and the free and delicate action of the will. It makes the man more animal and more gross, attacking the tissues of the body; it spoils and degrades the very germ of future generations. — AUGUST FOREL, M.D.

As a result of the study of the effects of alcohol on the senses, it is found in each instance that the power of the sense diminishes. The range of vision quickly decreases, and the ability to distinguish colors is obscured. The hearing is lessened. The sense of touch is obscured. In all the five senses a marked paralysis and diminished acuteness followed the use of small doses of alcohol.—C. H. SHEPARD, M.D.

"The fields are sweet with clover, the woods are glad with song;
The brooks are running over, the days are bright and long."

Waste matter is not so readily disposed of when alcohol is present. The retardation of waste is, however, no equivalent of the building up of new material.

—W. N. EDWARDS, M.D., F.C.S.

Cigarettes, either adulterated or unadulterated, are not beneficial to anybody, man or boy, and are more or less harmful to all who use them. — HON. GEORGE TORRANCE, Supt. Ill. Reformatory.

THE BUILDING OF A NATION.

IX. DOMINANT POLITICAL FORCES.

"THE old Hindoo saw in his dream the human race led out to its various fortunes. First, men were in chains which went back to an iron hand; then he saw them led by threads from the brain which went upward to an unseen hand. The first was despotism, iron and ruling by force. The last was civilization, ruling by ideas."

No one can thoughtfully study the history of the American nation without seeing how completely it has been directed and controlled by the influence of ideals. Amid the perils of sea, the privations of pioneer life, and dangers from hostile savages, religious liberty was sought and found. The hope of political liberty steeled the courage and spurred the efforts of the colonies in the strife and sacrifice of the Revolution, and in founding the new government. Insight into the meaning of true nationality inspired Washington and Hamilton in shaping the course and indicating the powers of that government; while the democratic ideals of universal freedom and the rights of individuals have kept the nation from despotic tendencies or abuse of power.

Reform and progress in our national life have come only as a definite ideal has been back of them as the motive. The extension of popular education, the improvement of social and industrial conditions, the extinction of slavery, the efforts to put away the drink and other evils,—all have resulted from the insight of those who saw the need and how to remedy it, and have had the courage and persistence patiently to convert public opinion.

A tiny stream breaking through one of the Holland dikes opens the way for a flood that sweeps all before it. So a new conception of national duty sinking little by little into the conscience of a free people slowly gains in volume until it becomes at length the great tide of public opinion before which prejudice, conservatism, and wrong must give way, and which at its flood bears the nation with irresistible force up the heights of progress. Mr. Bryce, in his "American Commonwealth," says of this power of public opinion in our nation:

"Towering over presidents and state governors, over congress and state legislatures, over conventions and the vast machinery of party, public opinion stands out in the United States as the great source of power, the master of servants who tremble before it."

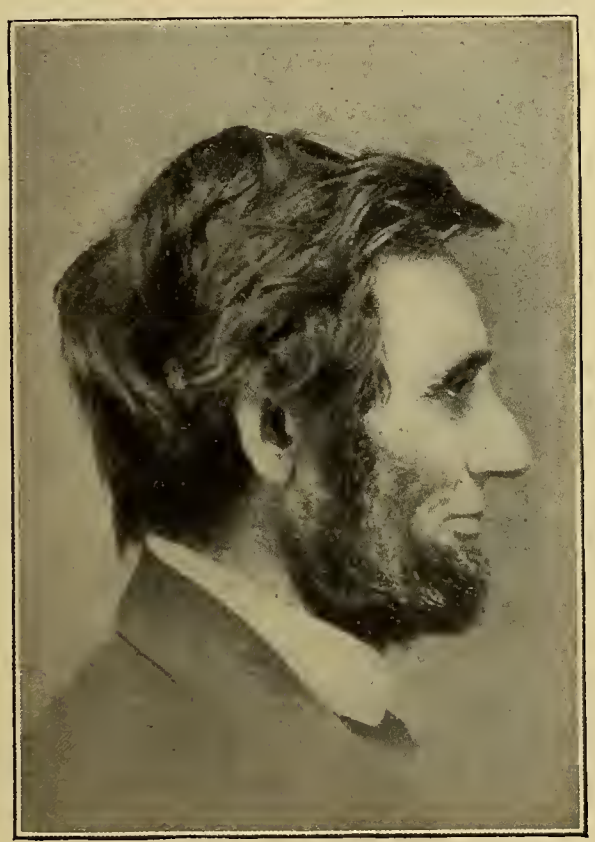
Public opinion is created and manifests itself in the press, the platform, or the voice of the people in petition, but in any question involving national destiny it sooner or later assumes definite form for action through political parties. The Constitution made no provision for political organizations, its framers apparently forgetting that human nature is such that men of similar likes and opinions tend to associate themselves for action. But in the very first question to be decided, that of the adoption of the Constitution, strong differences of opinion were revealed, and a disposition on the part of those of similar views to unite in support of them for or against the Constitution.

Thus came into existence the first distinctively American political parties, and as time went on, with new questions constantly to be settled, the importance of such parties instead of diminishing became more and more apparent, while their organization became increasingly complex. The Constitution gave the government form; political parties have given it life. Some one has said that they are to the government what motor nerves are to the muscles of the body, in that they give it direction and precision. With their complete organization, the unity of action in which there is strength is secured by caucus, convention, and the declaration of principles known as a "platform." By elections, the will of the majority is expressed for or against those principles, as they outline a particular policy in the conduct of the government, and the officials chosen are in honor bound to carry into effect in their management of the government under the Constitution the popular will so expressed. Thus our political parties at once so register the state of public opinion and supply the machinery by which this public opinion is put into operation that their history is inseparably bound up with that of the nation.

The questions of the constitutional powers of the government, of national supremacy and state's rights, the national bank, the tariff, our foreign policy, social and industrial evils—all have given color and variety to the details of party creeds and have swayed party action. No hard and fast lines can be drawn defining the boundaries of political faiths and of the great political organizations of the past and present. A crisis in national affairs has often shaken parties together as in a magician's hat, and as if by magic new organizations with new combinations of elements have emerged from the confusion to cope with the problems of the day. One needs only to attempt to trace in detail the fascinating history of political parties between the years 1825 and 1860 to realize that apparent party boundaries are but as ropes of sand. Through these years party lines included new combinations of political elements in each election influenced by personal animosities, the questions of the tariff and nullification, the national bank, and above all by the many phases of the slavery problem as they developed in quick succession. The Jacksonian Democrats, Whigs, Abolitionists, pro and anti-

slavery partisans of all political faiths, Free Soilers, and Republicans appear in quick and bewildering confusion. Yet it was but the confusion of the forming of battle lines for the great and decisive contest when the issue for and against slavery should become clear cut.

The real secret of differences in political faiths lies beneath the surface, and does not appear in party platforms or campaign war cries. It is to be explained rather in the tendencies of human nature. One of the most acute observers of American national life has said that two of the opposing influences underlying and controlling political action are "love of order and love of liberty." To the first may be referred the belief that a strong central government with wide powers is better for its people and most destined to endure. On the second rests that sublime faith in mankind which guards with jealous zeal any encroachment upon the right of the people to administer freely their own affairs. The first carried to its farthest limit would result in despotism; the second in anarchy. But in the play of forces upon one another through the power of the ballot box, each of these principles tempers the other, and preserves in our national life that happy medium between despotism and anarchy which is true liberty.



Abraham Lincoln.

"The kindly, earnest, brave, far-seeing man,
Sagacious, patient, dreading praise, not blame,
New birth of our new soil, the first American."

Yet it may not be wise to attempt to define too closely differences in principles. The necessities of temporary emergencies have often scattered to the winds a nicely formulated party policy, and devotion to both order and liberty has been manifested at times by the leaders of all parties. But, in general, it may be said that the principles of system and order, as embodied in a government of wide powers, have been distinctly traceable in the line of the Federalist, Whig, and Republican parties, while a sublime trust in popular judgment, and a love of widest individual liberty have marked the general policy of the Anti-Federalist, Republican-Democratic party.

It can not be denied that the party system has developed some very undesirable features. It has become all too easy for the direction of party affairs to fall into the hands of one or more unscrupulous leaders who, to gratify desires for personal power or gain, so direct and control political action as to divert it from its legitimate object, the administration of an honest and progressive government, and make the interests of the whole people subservient to those of the few. Yet in every party there are many men who would say with President Hayes that "He serves his party best who serves the country best," or with President Cleveland that "Party honesty is party expediency." Deep in the hearts of the American people is a love of good government, fair play, and the honest rule of the majority.

The real work of building up the nation has not been done by the political bosses, with all their seeming power. It is true the parties have been the agencies, but the work which will be enduring has been outlined and directed by the real leaders of the nation; men

"Who knew the seasons
when to take
Occasion by the hand,
and make
The bounds of freedom
wider yet."

Such men have indelibly stamped the impress of their personality and ideas upon our national consciousness and history. Lincoln was such a leader and perhaps our most conspicuous example. He read his times and their requirements with almost prophetic insight. With far-seeing wisdom he moulded public opinion and, looking beyond the narrow field of vision of those who would sacrifice union for the sake of liberty, and those who would forsake the principles of liberty for the sake of union, he made actual the ideal so nobly expressed by Webster years before of "Liberty *and* Union, one and inseparable."

Not every generation has its Lincoln, or needs him, but each has its own questions to solve, and as it meets them so far decides whether the progress of the nation shall be upward or downward, for as George McDonald has said:

"All growth that is not toward God
Is growing to decay."

ALCOHOL VERSUS FOOD.

AS Professor Atwater's polemics on the old alcohol-a-food dogma have been addressed to the laity who are not generally in a position to detect the fallacies of which his arguments are constructed, it becomes the plain duty of members of the medical profession to expose these fallacies in the public press in order that the people may learn the facts. The American people never make mistakes when they know the whole truth.

A most efficient way to bring out the fallacies in his statements on this subject is to range the truths for alcohol and for food in two parallel columns. It is indeed a deadly parallel for alcohol, and any one of the antitheses would bar it forever from the high and noble company of foods.

THE TRUTH ABOUT ALCOHOL.	THE TRUTH ABOUT FOOD.
A certain quantity will produce a certain effect at first, but it requires more and more to produce the same effect when the drug is used habitually.	A certain quantity will produce a certain effect at first, and the same quantity will always produce the same effect in the healthy body.
When used habitually it is likely to induce an uncontrollable desire for more in ever increasing amounts.	The habitual use of a food never induces an uncontrollable desire for itself in ever increasing amounts.
After its habitual use sudden total abstinence is likely to cause a serious derangement of the central nervous system.	After its habitual use sudden total abstinence never causes any derangement of the central nervous system.
Alcohol is oxidized rapidly in the body.	All foods are oxidized slowly in the body.
Alcohol not being useful is not stored in the body.	All foods being useful are stored in the body.
Alcohol is a product of decomposition of food in the presence of a scarcity of oxygen.	All foods are products of constructive activity of protoplasm in the presence of abundant oxygen.
Alcohol is an excretion and, in common with all excretions, is poisonous. It may be beneficial to certain phases of disease, but is never beneficial to the healthy body.	All foods are formed by nature for nourishment, and are by nature wholesome and always beneficial to the healthy body, though they may injure the body in certain phases of disease.
All medical men advise healthy persons to avoid alcohol altogether.	No medical men advise healthy persons to avoid food.
All connoisseurs advise people to avoid taking alcohol into the empty stomach.	People are universally advised to take food into the empty stomach.
The young developing individual is always advised to abstain from alcohol.	The young developing individual is always advised to partake bountifully of food.
The use of alcohol in common with narcotics in general is followed by a reaction.	The use of foods is followed by no reaction.
The use of alcohol is followed by a decrease in the activity of the muscle cells, and the brain cells.	The use of food is followed by an increase in the activity of the muscle and brain cells.

WINFIELD S. HALL, Ph.D., M.D.,
in Union Signal.

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The Martha's Vineyard Summer Institute begins its twenty-third annual session on Tuesday, July 10, 1900. It enjoys the honorable distinction of being the oldest and broadest summer school for teachers in the country. It is attractively located in the Atlantic Ocean, and the work is systematically planned and conducted. For full information address W. A. Mowry, Hyde Park, Mass.

Vigorous massage of the scalp to stimulate it is necessary in treating a child's hair that does not grow luxuriantly. Whatever tonic is chosen, must of the good derived from it depends upon its being thoroughly rubbed into the roots of the hair. This should be done at least three times a week. The hair should be cut if it is very long and thin.—[May Ladies' Home Journal.

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The Archbishop of Canterbury, as President of the National Temperance League, has issued a circular from Lambeth Palace, convening a congress of the World's Temperance Workers, to be held in the Medical Examination Halls, London, from June 9th to 18th, 1900. Mrs. Mary H. Hunt is to contribute a paper.

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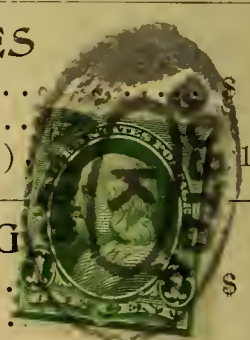

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